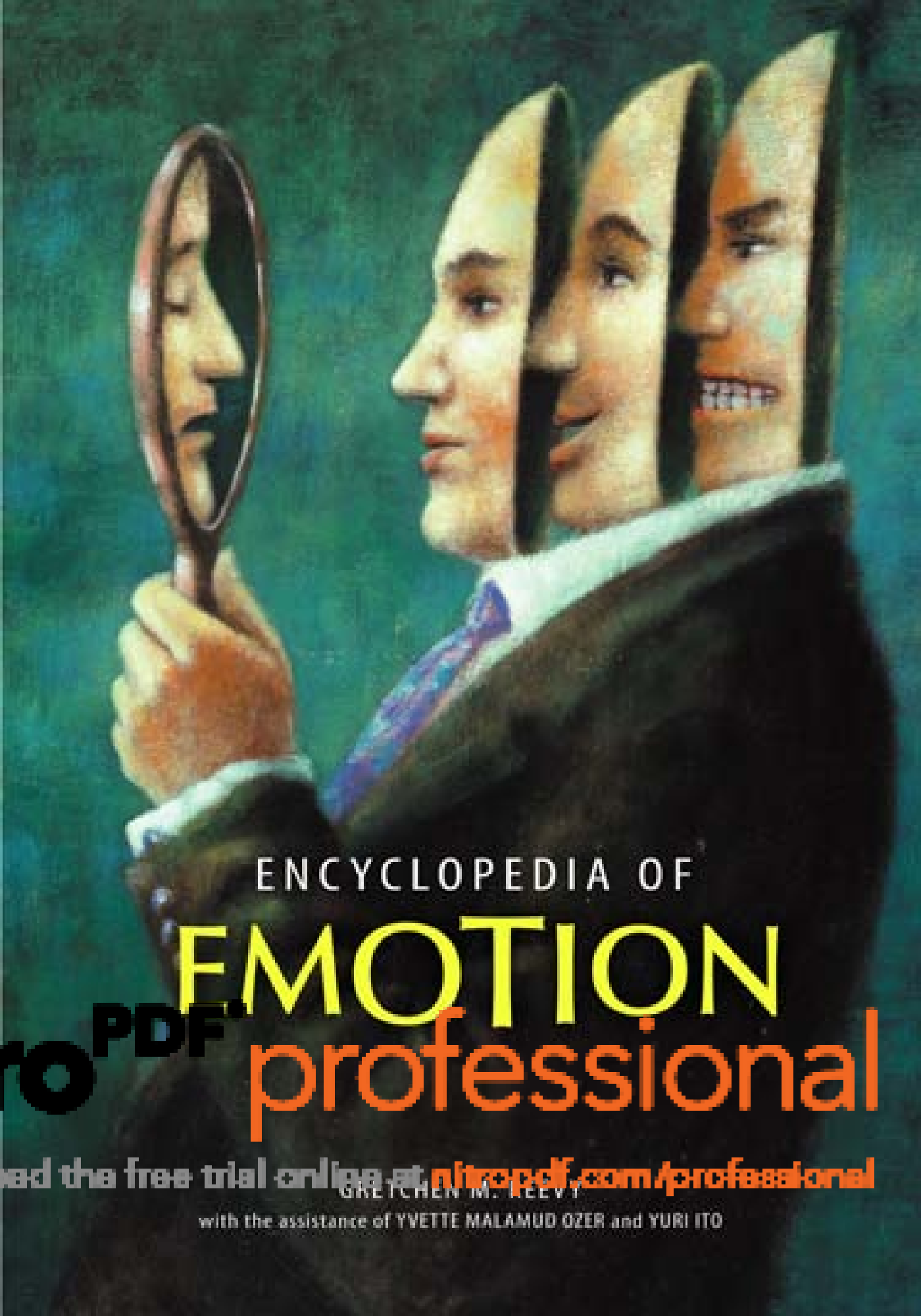

ENCYCLOPEDIA OF EMOTION professional

GRETCHEN M. REEVY
with the assistance of YVETTE MALAMUD OZER and YURI ITO

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VOLUME 1 & 2

Gretchen M. Reevy
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GREENWOOD
AN IMPRINT OF ABC-CLIO, LLC
Santa Barbara, California • Denver, Colorado • Oxford, England

Library of Congress Cataloging-in-Publication Data

Reevy, Gretchen.
Encyclopedia of emotion / Gretchen M. Reevy with the assistance of Yvette Malamud Ozer and Yuri Ito.
v. cm.
Includes bibliographical references and index.
ISBN 978-0-313-34574-6 (hard copy set : alk. paper) — ISBN 978-0-313-34575-3 (ebook set) — ISBN 978-0-313-34576-0 (hard copy volume 1 : alk. paper) — ISBN 978-0-313-34577-7 (ebook volume 1) — ISBN 978-0-313-34578-4 (hard copy volume 2 : alk. paper) — ISBN 978-0-313-34579-1 (ebook volume 2) 1. Emotions. I. Ozer, Yvette Malamud. II. Ito, Yuri. III. Title.
BF531.R445 2010
152.403—dc22 2010015899

ISBN: 978-0-313-34574-6
EISBN: 978-0-313-34575-3

14 13 12 11 10 1 2 3 4 5

This book is also available on the World Wide Web as an eBook.
Visit www.abc-clio.com for details.

Greenwood
An Imprint of ABC-CLIO, LLC

ABC-CLIO, LLC
130 Cremona Drive, P.O. Box 1911
Santa Barbara, California 93116-1911

This book is printed on acid-free paper ♾

Manufactured in the United States of America

This book discusses treatments (including types of medication and mental health therapies), diagnostic tests for various symptoms and mental health disorders, and organizations. The authors have made every effort to present accurate and up-to-date information. However, the entries in this book are not intended to recommend or endorse particular treatments or organizations, or substitute for the care of a qualified health professional. Specific situations may require specific therapeutic approaches not included in this book. For these reasons, we recommend that readers follow the advice of qualified health care professionals directly involved in their care.

To my parents, William R. Reevy and Carole M. Reevy, and to my psychology professor at the University of North Carolina, Chapel Hill, W. Grant Dahlstrom (1922–2006).
They taught me to love psychology.

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PREFACE

Since ancient times, scholars have been interested in emotion. In Western culture, ancient Greek philosophers—Plato, Aristotle, the Stoics, and the Epicureans—all addressed emotion. In Eastern culture, Confucius and Buddha examined emotion. In early writings originating from these eras, and for centuries afterward, emotions were generally viewed as problematical—reactions that should be controlled or contained. In more modern times, in particular since Charles Darwin's publication of *The Expression of the Emotions in Man and Animals* in 1872, emotions have been viewed from a more functional perspective: we react with fear in preparation to fight or flee, we respond with disgust to automatically expel the tainted food we have eaten. Many of our emotions—love, sadness, empathy—help us to bond with others, increasing the probability of survival of individuals and of whole groups of people who are interdependent.

We are interested in emotions because they serve a purpose. Additionally, we must consider the human impact of emotions that go awry, as happens in many mental illnesses—mood and anxiety disorders in particular. These expressions of dysfunctional emotion that are seen in clinical depression, in panic disorder, or in obsessive-compulsive behavior are associated with great suffering. But at a visceral, gut level, we are also interested in emotions because they are our lifeblood. Without emotions, our daily lives would be radically different—drab and dull.

This book, *Encyclopedia of Emotion*, was written to serve as a reference volume for all audiences, ranging from the general public to academics who study emotion. The 367 entries in this book cut across disciplines, representing research and theory from psychology, psychiatry, philosophy, sociology, anthropology, neuroscience, biology, animal behavior, history, literature, and the arts. The entries of emotion terms describe emotions, mental disorders and symptoms involving emotion (e.g., anxiety disorders and mood disorders), treatments for emotional disorders, tests for assessing emotions and emotion-related personality traits, eminent emotion scholars and other individuals relevant to the history of emotion research, organizations devoted to emotion topics, and other general terms related to emotion. Quick facts (e.g., statistics, historical information, interesting trivia) are presented in fact boxes accompanying many of the entries. We have attempted to cover the domain in as

representative a fashion as possible, however, as happens in projects that are limited by word count, some emotion topics have been excluded. We especially regret that we have failed to include entries for some individuals who have contributed significantly; in some cases, these individuals' contributions have been discussed in the introductory chapter. Since all authors have been trained as psychologists, psychological perspectives likely dominate.

Encyclopedia of Emotion presents an introduction that traces the history of emotion from the ancient Greek period through the present. Emotion topics covered in the introduction are the general concept of emotion, the way that mental illness has been conceptualized, treatment of mental disorders, and assessment of emotions and emotion-related personality traits for practical purposes (e.g., clinical and employment purposes). The book concludes with three appendixes: psychopharmacology (listing medications for emotional symptoms), organizations, and suggested readings.

Like many large projects, this book is the result of teamwork, and we would like to thank all who have supported us. Gretchen M. Reevy would like to thank her husband, Todd Manning, for his patience. She thanks her excellent co-authors, Yvette Malamud Ozer and Yuri Ito. In addition to writing, Yvette also co-edited the book and comanaged parts of the project. At California State University, East Bay, Dr. Eileen Barrett, Dr. Felix Herndon, Mr. Mark Karplus, and Dr. Michael Mahoney were all personally supportive and helpful. Dr. Alan Monat provided invaluable guidance regarding the ins and outs of publishing, and this is much appreciated. A number of years ago, at University of California, Berkeley, Dr. Christina Maslach was a caring and diligent writing mentor, and her efforts produced a person who loves to write.

Yvette Malamud Ozer would like to thank her family and friends: Richard Ozer and Becca Malamud Ozer were supportive, tolerant, and provided some great ideas. Jean Malamud and Nancy Jean both provided excellent writing feedback. At California State University, East Bay, several educational psychology department faculty members were particularly helpful, providing expertise, encouragement, and resources; these include Dr. Jack Davis, Dr. Greg Jennings, Dr. Rolla Lewis, and Dr. Janet Logan. She especially thanks Dr. Gretchen M. Reevy for the invitation to work on this book.

Yuri Ito would like to thank her parents, Masataka and Noriko Ito, for supporting her education in the United States. She thanks Dr. Gretchen M. Reevy for the invitation to coauthor the book.

The editorial staff at Greenwood and ABC-CLIO were professional and flexible. Thank you to David Paige and Debby Adams. Also, we thank the following faculty at California State University, East Bay, for reading drafts of portions of the manuscript: Dr. Daniel Cerutti, Dr. Jack Davis, Dr. Patricia Guthrie, Dr. Silvina Ituarte, and Dr. Janet Logan. Dr. Ted Alper at California State University, East Bay, provided helpful feedback in the early stages of the project. A number of California State University, East Bay, students were involved in this project, reading through portions of the manuscript for readability and checking for accuracy of references. These students were Deanna Baldock, Nicholas Colombo, Mikel Delgado, Chelsea Hall, Justin O'Neill, and Lacey Lawson. Sheroza Haniff conducted some research

on organizations for the organizations appendix, and Nicole Maté researched information that we used in some of the fact boxes. Additionally, this work was partially supported by a Faculty Support Grant from California State University, East Bay. Thank you all for contributing to our project.

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INTRODUCTION: HISTORY OF EMOTION

Gretchen M. Reevy

Emotions infuse our experiences with passion, interest, and meaning. Emotions are also sources of pain and disturbance. They can motivate actions that we later deeply regret. Without emotions, our lives would be unimaginably different, drab, and bland. Emotions have influences beyond our individual lives. Human emotions have impacted human history. As most emotion scholars now say, without emotions, humans would likely not have survived as they struggled to exist in the harsh environments on our planet.

An emotion is complex. When most people think of emotions, they think of their feelings. But the feeling component is only one aspect of an emotion; emotions also include physiological responses (heart rate may increase, sweating may occur, muscles may tense, etc.), brain activity, thoughts, expressions (facial, body gestures, etc.), and other elements. Although many emotion-related experiences—such as moods and emotion-related personality traits—occur over relatively long periods of time, emotions themselves are time limited. Emotions are reactions to external or internal events and last over a few seconds, minutes, or hours. Take, for example, the experience of a snake jumping toward you. Your reaction, an emotion, includes heart rate and blood pressure increase, a feeling of fear, and fearful thoughts. This reaction is brief; another reaction based on this experience would occur only if you conjured up a memory of the jumping snake. In the case of remembering the jumping snake, the emotional response was created by you—you created an internal stimulus that led to an emotion.

Over the ages, the way emotions have been viewed has evolved. In ancient Greek times, emotions were generally thought of as inconveniences, experiences that had to be controlled or managed. Now, many modern scholars adhere to evolutionary or social perspectives, or both, and see emotions as functional. According to the evolutionary approach, emotions evolved through natural selection because emotional reactions (e.g., fear, disgust) had survival value. Social and interactionist perspectives hold that emotions function in our social lives. For instance, affiliative emotions, such as love and attachment, bond us together, also increasing our probability of surviving and enriching our lives. However, viewing emotions from functional perspectives may create a problem: how do we reconcile the fact that many mental disorders, such as depression

and anxiety disorders, are disorders of emotion? This chapter will discuss how scholars have addressed this enigma.

In this chapter, I trace the history of how emotions in general have been viewed by scholars, how emotional disorders have been conceived of, and how people suffering from these disorders have been cared for (or not). Additionally, I discuss the history of assessment of emotions and emotion-related traits. Assessments have been conducted for a variety of purposes, especially for diagnosis of mental disorders and to aid in employment decisions.

Theories and Concepts of Emotion

In the earliest writings that discussed emotions, emotions tended to be viewed as inconveniences and sources of disturbance and disruption. Individual adherents of two ancient Greek and Roman schools of philosophy, Stoicism and Epicureanism, wrote extensively about emotions. Marcus Aurelius, who was the emperor of Rome from AD 161 until 180 and a self-proclaimed Stoic, wrote the following admonition to himself in his diary:

> Begin each day by telling yourself: Today I shall be meeting with interference, ingratitude, insolence, disloyalty, ill-will, and selfishness. . . . But for my part I have long perceived the nature of good and its nobility, the nature of evil and its meanness, and also the nature of the culprit itself, who is my brother (not in the physical sense but as a fellow creature similarly endowed with reason and a share of the divine). . . . Neither can I be angry with my brother or fall foul of him, for he and I were born to work together, like a man's two hands, feet, or eyelids. (Marcus Aurelius, ca. AD 167)

In this passage, Marcus Aurelius was talking himself out of acting on his emotions, anger in particular, in the event that he would meet with interference, ingratitude, and so forth. He tells himself to instead adopt a philosophical and "rational" attitude, which he saw was a constructive approach to interpersonal relations. He is struggling to be a good person. This passage, brief though it is, conveys Stoicism well.

Stoicism was founded in 300 BC by the Greek philosopher Zeno and survived into the Roman era until about AD 300. According to the Stoics, emotions consist of two movements. The first movement is the immediate feeling and other reactions (e.g., physiological response) that occur when a stimulus or event occurs. For instance, consider what could have happened if an army general accused Marcus Aurelius of treason in front of other officers. The first movement for Marcus may have been (internal) surprise and anger in response to this insult, accompanied perhaps by some involuntary physiological and expressive responses such as face flushing and a movement of the eyebrows. The second movement is what one does next about the emotion. Second-movement behaviors occur after thinking and are under one's control. Examples of second movements for Marcus might have included a plot to seek revenge, actions signifying deference and appeasement, or perhaps proceeding as he would have proceeded whether or not this event occurred: continuing to lead the Romans in a way that Marcus Aurelius believed best suited them. In the Stoic view, choosing a reasoned, unemotional response as the second movement is usually appropriate response.

The Stoics believed that to live the good life and be a good person, we need to free ourselves of nearly all desires such as too much desire for money, power, or sexual gratification. Prior to second movements, we can consider what is important in life. Money, power, and excessive sexual gratification are not important. Character, rationality, and kindness are important. The Epicureans, first associated with the Greek philosopher Epicurus, who lived from 341 to 270 BC, held a similar view, believing that people should enjoy simple pleasures, such as good conversation, friendship, food, and wine, but not be indulgent in these pursuits and not follow passion for those things that hold no real value like power and money. As Oatley (2004) states, "the Epicureans articulated a view—enjoyment of relationship with friends, of things that are real rather than illusory, simple rather than artificially inflated, possible rather than vanishingly unlikely—that is certainly relevant today" (p. 47). In sum, these ancient Greek and Roman philosophers saw emotions, especially strong ones, as potentially dangerous. They viewed emotions as experiences that needed to be reigned in and controlled.

As Oatley (2004) points out, the Stoic idea bears some similarity to Buddhism. Buddha, living in India in the 6th century BC, argued for cultivating a certain attitude that decreases the probability of (in Stoic terms) destructive second movements. Through meditation and the right attitude, one allows emotions to happen to oneself (it is impossible to prevent this), but one is advised to observe the emotions without necessarily acting on them; one achieves some distance and decides what has value and what does not have value. Additionally, the Stoic idea of developing virtue in oneself, of becoming a good person, which the Stoics believed we could do because we have a touch of the divine, laid the foundation for the three monotheistic religions: Judaism, Christianity, and Islam (Oatley, 2004). As with Stoicism, tenets of these religions include controlling our emotions lest we engage in sinful behavior.

Many centuries after Stoicism and Epicureanism, Dutch philosopher Baruch Spinoza (1632–1677) wrote about emotions. To some extent, Spinoza's ideas echoed those of the Stoics and Epicureans while also making novel contributions. In Spinoza's (1661–1675/1955) book *The Ethics*, particularly in his chapter "On Human Bondage," he presented his worldview: the universe is God's expression, and each human being is part of that expression. Spinoza stated that we each tend to have a false view, that we exist as separate entities. This false view bonds us to suffering and discontent. To be free of bondage, we must realize the part we play in the whole rather than believing that we are prime forces in what happens, trying to coerce situations so that our desires are met, becoming angry and bitter when they are not. If we see the world as it is, we have what Spinoza calls *active emotions*, which are based in love for the world as it exists and love for others. If we fight against the accurate worldview, we have what Spinoza calls *passive emotions*, which are based in the belief that our desires should be realized; the resulting emotions tend to be anger, envy, and hatred. To free ourselves from bondage, we must recognize and accept our emotions. Spinoza's ideas influenced modern views of emotion, and the particular idea about the need to understand our emotions is the guiding principle behind psychotherapy (Oatley, 2004).

Late 1800s: Darwin's Book Makes a Convincing Case That Emotions Are Functional

A radical shift in the view of emotions occurred with the writings of one of the great thinkers of the 19th century: Charles Darwin. In the late 1800s, after publishing his

book on evolution, *On the Origin of Species*, which was first published in 1859, Darwin published a book that had more influence later than it had initially: *The Expression of the Emotions in Man and Animals*, first published in 1872. In this book, Darwin described and illustrated his and others' observations of emotional expressions in humans and animals, demonstrating some similarities between expressions of humans and expressions of some animals. For example, he described and graphically represented that a threatened dog or cat displays a snarling expression that looks similar to the angry expression of a human. As another example, he presented drawings of the *Cynopithecus niger* (a type of monkey) in a "placid" condition, during which it is expressionless. Immediately after being caressed, the monkey appears to be smiling, and its face looks similar to that of a happy person. Darwin argued that the existence of these similarities demonstrates that emotional expression must have evolved through natural selection in the same way that other characteristics evolved. He further contended that the expressions must serve a function; they enhance survival of the organism. Additionally, his observations suggest that emotions exist as distinct categories (e.g., happiness, anger, sadness, fear) because specific facial and other expressions are associated with these specific emotional states. Darwin's idea that emotions are functional is now widely held. For instance, world-renowned American neuroscientist Joseph LeDoux (1996) wrote a book in which he describes the brain physiology behind emotions (*The Emotional Brain*). As LeDoux states, *emotion* is a word we made up for different experiences that have some characteristics in common. But actually, LeDoux said, each emotion (fear, anger, sadness, contentment, etc.) is a different type of experience that is associated with the activity of different brain systems. We have a brain and body system for defending ourselves against danger—we use the word *fear* as a label for this entire reaction and experience. We have a brain and body system for expelling dangerous substances, usually food—we use the word *disgust* for this. Each system developed for a purpose, and each of these systems has some separate brain and body physiology involved (although there is also overlap). The systems do not have a common origin because each system evolved as a result of environmental pressure. Like Darwin, LeDoux discusses the similarities between animals and humans in regard to emotional response and experiences.

Many other leading emotion scholars of our time largely adopt Darwin's views and certainly agree that emotions evolved through natural selection and that emotions have a function. American psychologists Paul Ekman (2009) and Keith Oatley (2004) state that Darwin's 1872 book was the beginning of the modern view of emotion. Ekman goes so far as to say that this book should be considered the publication that initiated the science of the entire field of psychology.

Contemporaneous with Darwin was another leader in the science of emotion, American psychologist and philosopher William James. James's most significant contribution was the *James-Lange theory* of emotion, which was independently developed in the late 19th century by James and by Danish psychologist Carl Lange. James first discussed his view on the genesis of emotion in an article titled "What Is an Emotion?" published in the journal *Mind* in 1884. Later in his book, *The Principles of Psychology*, published in 1890, he explicitly stated his theory of emotion. Around the same time, Lange published similar views and reaffirmed James's theory.

The James-Lange theory of emotion is based on the principle that emotion is a result of physical reactions to a stimulus; the body reaction to a stimulus precedes the feeling aspect (subjective experience) of the emotion. Specifically, James and Lange

specifically James & Lange

suggested that the perception of a stimulus produces a specific body reaction and that the body reaction causes the emotional feeling. This sequence of emotional experience contradicts the common notion that emotional feeling precedes the bodily reaction to a stimulus. In his article, James stated that "we feel sorry because we cry, angry because we strike, afraid because we tremble" (Lange & James, 1922, p. 13). A major point of this theory is that it does not assume any intervening cognition of emotion that comes after the physiological arousal. The arousal itself is the emotional feeling. An additional significant aspect of this theory is that different emotions might be associated with different physiological responses, although James and Lange did not specifically address this issue (Russell, 2003).

James and Lange held the idea that physiological activity is necessary for the production of emotional experience. In their view, the emotion-provoking object itself is not strong enough to produce emotional experience. As some researchers have pointed out, some of James's statements lacked clarity, leading to some confusion about the theory. For instance, James said that when you see a bear, you first run away then feel fear, rather than feeling fear then running away (as common sense would suggest). But others have said that running away from a bear is not automatic: we would not run away from a bear in a zoo or a bear that we saw sleeping in the woods. As they say, some interpretation, or appraisal, of the situation is necessary to run. For example, Kalat and Shiota (2007) restate and clarify the James-Lange theory as shown in Table 1.

Table 1: The James-Lange Theory

Event	→	Appraisal of event	→	Action (both behavioral and physiological responses)	→	Emotional feeling
(threatening bear)	→	(this is threatening)	→	(running and stress reaction)	→	(fear)

The James-Lange theory has had a tremendous impact on the development of emotion theory, for example, by inspiring research on whether differential physiological responses occur for the various emotions. However, the James-Lange theory has been heavily criticized. In particular, the theory was scientifically attacked by Walter Cannon, an American physiologist in the late 1920s (e.g., see Cannon, 1927). One criticism he made was that many of the necessary physiological responses that James and Lange refer or allude to, in particular, the hormonal action of the autonomic nervous system, are too slow to cause the emotional feeling. Another critique was that one would expect individuals with spinal cord injuries to experience relatively numbed emotions (because nervous system damage would mean a reduced physiological reaction to a stimulus), but research has produced mixed findings, with some results suggesting less intense emotional experience among spinal cord injury patients (e.g., Mack, Birbaumer, Kaps, Badke, & Kaiser, 2005) and other results indicating normal emotional experience (e.g., Cobos, Sánchez, Pérez, & Vila, 2004).

Along with critiquing James's theory, Walter Cannon produced an emotion theory of his own called the *Cannon-Bard theory*. He made another important contribution

prior to his theory that laid the groundwork for the Cannon-Bard theory. Cannon is the person responsible for discovering the *fight-or-flight response*, otherwise known as the *stress response*. Cannon's research led him to conclude that when an animal is strongly aroused, usually due to fear or rage, it produces the fight-or-flight response, a full-body emergency reaction largely controlled by the activity of the sympathetic nervous system (a branch of the autonomic nervous system) and the release of the hormone adrenaline. This response includes increased heart rate, blood pressure, and perspiration; dilation of pupils; and many other physiological responses. Cannon described his findings in his book *Bodily Changes in Pain, Hunger, Fear, and Rage*, published in 1915.

In Cannon's research, animals produced this general and dramatic physiological response to stimuli—the stress response. Therefore the James-Lange theory, which suggested different physiological responses for different emotions, did not make sense to Cannon. According to the Cannon-Bard theory of emotion (Cannon, 1927), named also for Cannon's collaborator, Philip Bard, when an individual encounters a stimulus, the different elements of the resulting emotion, the physiological response, the cognition (thought), and the emotional feeling are produced simultaneously. Like the James-Lange theory, the Cannon-Bard theory is historically important and inspired further research on the relationship between physiology and emotional feeling, and now—the new concept that Cannon introduced—cognition. However, many aspects of the Cannon-Bard theory are not considered valid today, largely because much of the theory is too vague (e.g., Kalat & Shiota, 2007).

Mid-1900s: Cognition Enters the Picture

Darwin, James, Cannon, and others encouraged emotion scholars to think about the relationships between physiology (including brain physiology) and emotional feeling; their work assumed that emotions have functions. Gradually, emotion scholars began to consider where and how cognition plays a part in emotion. In 1960 Czech-born Loyola University professor Magda Arnold (one of a few preeminent women psychologists of the first half of the 20th century) wrote a classic book, *Emotion and Personality*, in which she discussed the idea of cognitive appraisal and its relation to emotion. Arnold wrote that a cognition—an appraisal, as it is called—occurs very early in the emotion process. In her view, in the emotion process, a stimulus occurs, and very quickly and unconsciously, the person appraises the stimulus as basically good or basically bad. The appraisal itself is unconscious, but the effects are experienced in consciousness as an emotional feeling. The appraisal leads to an action tendency. Contrasted with William James's view, an action does not have to occur at all, and it certainly does not have to occur for a feeling to occur—the appraisal leads to the feeling.

Around the same time that Arnold's book was released, two other American psychologists were conducting studies on the relationship between cognition and emotion. Stanley Schachter and Jerome Singer, at Columbia University, like James believed that physiological arousal or feedback was important in the creation of an emotion. But they also agreed with Cannon that the physiological arousal was not specific to each emotion. Their *two-factor theory* or *cognitive arousal theory* holds that a stimulus occurs, then arousal occurs, then the individual interprets (appraises) the arousal; both the arousal and the cognitive interpretation determine the emotion (Schachter & Singer, 1962). They conducted a number of studies in which they showed that individuals use contextual cues to interpret their own arousal and produce an emotion that is

consistent with both the arousal and the cues. For instance, in one set of studies, participants were given shots of adrenaline (which produces arousal, similar to the arousal associated with experiencing certain strong emotions) while they were told that they were receiving shots of a vitamin preparation. Some were told that the injection would cause arousal and others were not. Then participants were placed in one of two situations. In one situation participants were put in a room with a person (someone in on the experiment) who was acting happy and joyful. In the second situation, different participants were put in a room with a person who was acting annoyed and angry. The results of the study were that participants who had *not* been told about the arousing effects of the injection mirrored the behavior and mood of the person with whom they were placed in the room, while those who *had* been told that the injection was arousing did not mirror the other person. Schachter and Singer's theory has been criticized on a number of points. One point is that Schachter and Singer failed to explain why we become aroused in the first place. Clearly the brain must determine that there is a reason to become aroused (e.g., a threatening stimulus). Magda Arnold's theory published in 1960 had addressed this issue.

Following Arnold's, Schachter and Singer's, and others' publications, the cognitive approach to emotion was preeminent. This cognitive paradigm in emotion theory and research mirrored the development of the field of psychology in general; the cognitive revolution in psychology began in the 1950s and continued through the 1980s (LeDoux, 1996).

1960s and Onward: Paul Ekman's Work Revitalizes the Darwinian Approach

Although cognitive scientists were dominant in psychology for several decades from the middle of the 20th century onward, researchers representing other approaches made significant contributions. In particular, beginning in the 1960s and continuing through the 1970s and 1980s, American psychologist Paul Ekman and colleagues studied facial expressions in humans across cultures. Their basic approach was to take photographs of people displaying facial expressions of various emotions—Ekman chose anger, disgust, fear, happiness, sadness, and surprise. He and his colleagues then presented the photos to individuals in a wide variety of cultures, including some where the residents had never met people from the Western world. The researchers asked participants to engage in a matching task: identify which face goes with which of the six emotions (in many cultures, the research involved utilizing translators). These studies indicate a high level of similarity in interpreting facial expressions across cultures (see Ekman & Friesen, 1975). This research revitalized the issue of whether there are basic emotions—separate emotions such as anger, fear, and sadness, with specific physiological, expressive, and other reactions associated with each—or whether emotions exist in other ways (e.g., as existing on a continuum from unpleasant to pleasant). Additionally, Ekman, like Darwin, discussed both immediate survival functions and longer-term social functions of emotions. Since emotional expression, including facial expression, is a sign to others about the way an animal or person is feeling, expression helps to cultivate bonds (e.g., a sad expression could encourage an observer to provide nurturing behaviors toward the sad person) or aids in the creation of power relationships between individuals (e.g., an angry and contemptuous expression could communicate dominance).

During the 1970s and 1980s, some researchers challenged the cognitive approach more directly. For instance, Polish-born American psychologist R. Zajonc

conducted a number of studies on the *mere exposure effect*, the tendency to develop a liking for a stimulus (a person, a product in an advertisement, etc.) based on familiarity—mere exposure—rather than because the stimulus holds any value for us. He concluded that people can develop emotional feelings without cognitions and that these unconscious, automatic feelings affect our behavior more than does cognition. His main paper on the subject, "Feeling and Thinking: Preferences Need No Inferences" (Zajonc, 1980), was received as highly provocative and renewed the debate on whether emotional feeling or cognition is primary. His main opponent in the debate was American psychologist Richard Lazarus, who took a strong and emphatic position regarding the role that cognition plays in emotion, stating that cognition is both a necessary and sufficient condition for emotion (Lazarus, 1982).

Late 20th Century: An Integration of Diverse Approaches to Emotion

Zajonc's and Lazarus's debate and research, and the work of others, in time led to a better integration of the diverse threads of emotion theory. By the early 1990s, Lazarus (1991) had integrated Zajonc's unconscious preference formation theory into his cognitive theory of emotion, arguing that what is registered and processed unconsciously can be considered a cognition; unconscious processing does not preclude cognitive processing. The debate regarding the relationship between cognition and emotion continues, and much about emotion (and cognition) has been learned because of this debate.

The ancient theory that emotions are often inconveniences that overpower our better judgment is now rarely held. Instead, emotions are seen as having a number of interrelated functions. They are immediate reactions that often increase our probability of survival in the moment (e.g., fear and disgust reactions). They enhance our survival through influencing our attachment with others. They provide other additional interpersonal functions, for instance, they are signals to conspecifics (other members of our species), communicating our feelings. How and why, then, are emotions often sources of pain? Torturous, dysfunctional emotions are the primary characteristics of so many mental disorders such as depression and the wide variety of anxiety disorders. The answer may lie in our evolutionary history. Many emotion theorists now see that overall, both emotions and cognitions have survival value. Nonhuman animals experience immediate emotional reactions. Humans, in addition to experiencing emotional reactions, have the capacity for cognition, which may be utilized to increase the survival function of the immediate emotional reaction or, in the event of an immediate reaction that is dysfunctional, to correct for this dysfunction. As American psychologist Robert Plutchik said:

> The appropriateness of an emotional response can determine whether the individual lives or dies. The whole cognitive process evolved over millions of years in order to make the evaluation of stimulus events more correct and the predictions more precise so that the emotional behavior that finally resulted would be adaptively related to the stimulus events. Emotional behavior, therefore, is the proximate basis for the ultimate outcome of increased inclusive fitness. (Plutchik, 1990, p. 18)

Dutch psychologist Nico Frijda (1986) has discussed a number of ways that our emotions may mislead us. For instance, we sometimes [illegible] situations improperly,

perhaps because we are having emergency reactions where more deliberate and thoughtful evaluation would be more useful, or we sometimes have circumstances that are simply beyond our ability to cope, that tax our resources. Cosmides and Tooby (2000) specifically explain the potential dysfunction from an evolutionary point of view. Emotions direct our behaviors by detecting events related to concerns and goals that existed during human evolutionary history: threats, losses, successes, and so on. However, the situations that exist today are not the same as those that existed when humans lived differently, such as during the hunter-gatherer era, and some of our emotional responses to particular stimuli are no longer appropriate. For instance, when we lived under different conditions, fear stimuli were very different and often physical. As an individual was out hunting, he may have encountered a large animal that was prepared to spring at him. In that situation, the body's preparation for fight or flight was functional. In modern societies, however, we have such fear reactions for very different types of threats such as fear of losing one's job or all one's money. In these cases, it is not clear that a fight-or-flight response is as helpful (although a certain level of anxiety may help encourage one to look for another job or protect one's money), yet we have the response anyway, a response that is too dramatic given the stimulus; it is part of our biological makeup. The anxiety disorders have been explained from this perspective. For example, posttraumatic stress disorder reactions, which involve vigilant anxiety and reliving of the traumatic experience (e.g., injury in combat), may have been functional in humans' earlier existences as hunter-gatherers and so forth, keeping them prepared for dangerous stimuli that may recur. But in modern times, many extreme stressors that lead to posttraumatic stress symptoms never recur, and the individual is left with torturous symptoms that serve no purpose.

The Present and Future

Basic issues surrounding emotion continue to challenge emotion scholars. The field continues to address the question of the influences of genetics and environmental factors, and their interactions, on all aspects of emotion. A number of interesting books describe societies in which the emotional makeup of individuals differs from that in most other societies; these differences are presumed to be socially caused. For instance, Oatley (2004) discusses Jean Briggs's (1970) recounting of her life with the Utku people from the Arctic Circle. The book, *Never in Anger*, explains the strong prohibitions Utku people have against expressions of anger. An ongoing issue is whether emotions exist as distinct categories or along dimensions (e.g., pleasant to unpleasant and high to low arousal). A dimensional perspective would imply, for instance, that sadness and fear are not distinct emotions; rather, they simply differ in regard to degree of unpleasantness. Prominent modern themes in emotion research and theory include highly sophisticated research on the relationship between brain physiology and emotion (for reviews, see LeDoux & Phelps, 2008; Wager et al., 2008) and focus on the interpersonal–social functions of emotion (e.g., Ekman, 1999; Oatley, 2004). Oatley (2004) anticipates that the future of thinking about emotion will focus on the notion that emotions are "roots of relationships." Thinking about emotions involves thinking about relationships. We can cultivate kinder emotions that have roots in our evolutionary history such as empathy and compassion. To some extent, this involves having a skeptical attitude toward first movements of emotions; the tendencies for these reactions evolved when humans lived differently than we live today. We can

utilize a combination of our emotional reactions and our cognitive capacities to enhance our relationships and our own senses of well-being. As Oatley (2004) states, the ancient Greeks and Romans admonished us to beware of two emotions in particular: hubris and anger. Oatley agrees that there is wisdom in this warning; however, in his view, the potentially most dangerous emotion is contempt: the tendency to treat others as if they are not connected to us, as if they are "outside of human relationship" (p. 155).

Treatments and Conceptions of Emotional Disorders

Psychological suffering and disturbance, what we now call *mental illness*, has been recognized since the beginning of civilization. The ancient Greek philosopher-psychologist Hippocrates, often known as the Father of Medicine, wrote descriptions of many of the mental illnesses we know today, including melancholia, phobias, mania, postpartum depression, paranoia, and hysteria. His book containing these descriptions, *The Art of Healing*, was published before 400 BC. Hippocrates believed that both physical and mental diseases were due to natural causes. These ideas about bodily origins of mental illness are what we now call a *somatogenic perspective*. According to Hippocrates, humans possess four humors (bodily fluids), blood, yellow bile, phlegm, and black bile, and an imbalance of these fluids produced illness, both physical and mental. For instance, an abundance of black bile was associated with melancholia and yellow bile with mania. Throughout history, somatogenic perspectives have typically alternated or coexisted with psychogenic perspectives, which hold that the principal causes of abnormal functioning are psychological.

During the Greek period and into the Roman Empire, which collapsed around AD 500, the mentally ill were treated well in some regards; they were often prescribed rest, a vegetable diet, exercise, and other natural and humane remedies. However, Hippocrates' belief about humors and their relation to mental illness led to bloodletting, a practice that caused incalculable harm to thousands of individuals over the centuries. The draining of blood, which ranged from mild to excessive, could lead to immediate death.

The Middle Ages: Demonology and Poor Treatment of the Mentally Ill

After the fall of the Roman Empire, during a period known as the Middle Ages (AD 500–1350), treatment of the mentally ill deteriorated. During this era of the rise of the Church and rejection of scientific explanation, a common belief was that symptoms of mental illness were caused by possession by the devil, a position called *demonology*. Thus the word *treatment* is not appropriate for the way in which many of the mentally ill were managed and handled; their maladies were often viewed as self-inflicted due to a choice to collude with the devil. In relatively good times, they were generally ignored, perhaps living on the streets, but during periods of extreme stress in society, such as plagues and wars, the mentally ill became scapegoats.

The primary form of scapegoating of the mentally ill was to accuse them of witchcraft. Those who were believed to be witches were often killed by hanging, drowning, or burning at the stake. A book written by two German priests in the 1480s became the textbook for identification and treatment of suspected witches. In the text, *Hammer of the Witches*, by Jakob Sprenger and Heinrich Kramer (1486), the description of behavior and characteristics of witches, including hallucinations and delusions,

depression, catatonia, and paranoia, is clearly a depiction of mentally ill persons. Sprenger and Kramer attributed these symptoms to demonic possession that individuals (usually women) chose, often because of unsatisfied lust, which they would then attempt to satisfy through interaction with the devil. The remaining section describes the techniques (including various forms of torture) for determining that someone was a witch. From the 15th through the 17th centuries, between 200,000 and 500,000 witches were killed in Europe, 85 percent of whom were women or girls (Harris, 1975). The same view and so-called treatment for mental illness occurred in the New World during the same time period. If the mentally ill were not accused of witchcraft during this era, they were often placed in prison, fool's towers, or lunatic asylums.

Joan of Arc heard voices; she was found guilty of witchcraft, heresy, and sorcery in 1431 and burned at the stake (Hothersall, 2004).

The Renaissance: Movement toward Humane Treatment on Some Fronts, While Demonology Persists on Other Fronts; the Rise of Asylums

After the Middle Ages, during the Renaissance (about 1400–1700), parallel developments occurred in regard to treatment of the mentally ill. As described earlier, scapegoating of the mentally ill persisted, along with continued belief in demonic possession. At the same time, this was an era of scientific revitalization and cultural flourishing. People exhibiting strange behaviors came to be viewed by many as having diseased minds, in much the same way that the body may be diseased. During this period, several religious shrines throughout Europe were committed to relieving the symptoms of the mentally ill. As mentally ill people came to these shrines to receive treatment, in some cases they stayed and formed small colonies. For instance, a shrine in Geel, Belgium, is viewed by many historians as a predecessor of modern community mental health programs (mental health programs that are located in the communities in which mentally ill persons live; e.g., van Walsum, 2004). Patients who lived in Geel and who were well enough could go into town and interact with their families and the community during the day then return to Geel at night to sleep.

In addition to religious groups, medical professionals began to take some responsibility for the mentally ill. In London, England, the first hospital to accept mentally ill patients was established during the end of the Middle Ages in 1330, a convent of St. Mary of Bethlehem (Hothersall, 2004). In 1543, during the Renaissance, King Henry VIII founded the Hospital of St. Mary of Bethlehem as an asylum, one of many that began to spring up throughout Europe dedicated exclusively to caring for the mentally ill. It came to be known as "Old Bedlam," a Cockney corruption of *Bethlehem*. Although the asylum may have been founded with at least some good intentions, the primary purpose for its existence (and the existence of other asylums) was confinement. Before long, inmates were chained, beaten, and poorly fed. Their custodians were not paid by the hospital but earned money by displaying the inmates to the public. A visit to Old Bedlam was an entertaining [illegible] for the middle and upper classes. Mentally ill individuals who were not interesting to the public [illegible] stance,

depressed persons, were released on the London streets wearing badges that indicated they were allowed to beg and were called "Toms of Bedlam" (Hothersall, 2004). In 1770, the first institution in the United States that focused exclusively on treating the insane was established by request of the British governor: the Virginia House of Burgesses. Inmates in this asylum received similar treatment to those in Europe: chaining, beating, poor nutrition, and so forth.

The 19th Century and Early 20th Century: Attempts at Reform and Moral Treatment

By the late 1700s and early 1800s (in some cases before), some individuals began to comment publicly on the inhumanity of the asylums. In addition to chaining and improper nutrition, asylums often administered bizarre treatments such as repeatedly dunking inmates in cold water, spinning inmates in circles, and bloodletting. A significant figure in improving the treatment of the mentally ill was French physician Phillipe Pinel. Pinel, an idealist and humanitarian, began his career practicing traditional medicine but ended up moving to Paris to treat the poor in that city. He developed an interest in the mentally ill, and his interest became a passion when a good friend, a younger man of 24, started to exhibit symptoms of what was probably bipolar disorder (formerly called manic depression). During an episode, the young man ran from the house in which he was staying, got lost in the woods, and was attacked and killed by wolves. Shortly afterward, Pinel began writing about mental illness and became well known locally as a person who was interested in care of the mentally ill.

The red-and-white barber's pole was the sign of a barber-surgeon who was a bloodletter (Hothersall, 2004, p. 255).

In 1793 Pinel was appointed as director of the Bicêtre Asylum in Paris. With a goal of creating a policy for humane treatment, Pinel commenced by observing the inmates carefully, noting their different afflictions—some were completely despondent, others uncontrollably psychotic, shouting out as they experienced hallucinations and delusions, others frequently normal with periods of psychosis, and so forth. Pinel concluded that a first step toward humane treatment would be an unchaining of the inmates. Pinel's suggestions to his supervisors about unchaining were met with ridicule, and Pinel responded by continuing ahead, but doing so in a very careful and deliberate fashion (Hothersall, 2004); he proceeded by unchaining those individuals who were least likely to cause a disruption. He spoke to inmates, explaining what he was doing and seeking their cooperation. Although an Italian named Vincenzio Chiarugi had been the first person in Europe to unchain inmates a few years earlier, what Pinel did was more deliberate, was recorded more thoroughly, and occurred over a longer period of time (Hothersall, 2004). Thus Pinel is often known as the first person who unchained the asylum inmates in Europe. Pinel also improved their diets and ceased the inhumane treatments. In the first two years of Pinel's directorship,

the mortality rate at the asylum dropped dramatically, from about 50 to 67 percent of inmates per year to about 12.5 percent. Pinel was then assigned to the women's asylum near Paris, used the same methods with success, and was famous throughout Europe within a few years.

Another significant person in the treatment of the mentally ill during this time period was Englishman and Quaker William Tuke. When Tuke was 58 years old, a Quaker woman died in a suspicious manner in an asylum. This brought the issue of treatment of the mentally ill to Tuke's attention. He visited the asylum in question and was shocked and disgusted by what he saw. He, along with the help of the Society of Friends (Quakers), decided to create a home for the mentally ill, which became known as York Retreat (in the country near York, England), established in 1796. The retreat was in farm country, with small domestic animals present, to help create a relaxing, homey environment. Patients were given good food; opportunities for exercise; recreation; religious activities and instruction; medical care; and freedom, kindness, and respect. Patients were not chained, although some methods of restraint were used temporarily as a last resort. The retreat is still in operation today. York Retreat became an example for other similar institutions throughout Europe and a few in the United States such as the Connecticut Retreat, which was established in 1823. Thomas Scattergood—a Quaker from Philadelphia—visited the York Retreat. Based on what he saw, he encouraged the Philadelphia Friends to create what became the first private psychiatric hospital in the United States: the Friends' Asylum for the Use of Persons Deprived of the Use of Their Reason, established in 1813. The same institution (now called the Friends Hospital of Philadelphia) exists today.

Tuke's York Retreat may have been the first example of animal-assisted therapy, a form of treatment in which animals are used to help restore people to mental health.

In the United States, the 1800s brought significant advancement in treatment. Perhaps the most influential American was Dorothea Lynde Dix. More than one account exists about how Dix came to be interested in the plight of the mentally ill (Gollaher, 1995). However, in all stories, Dix visited a woman's jail or prison when she was in her late thirties or early forties and was appalled by what she saw there: the mentally ill lived in squalid conditions and were treated even worse than the persons who were suspected or convicted of crimes. For the next 40 years—from the 1840s through the 1880s, until she died—she worked to improve conditions for the mentally ill throughout the United States. Dix worked in a systematic fashion to raise consciousness and effect change. She proceeded state by state, starting with Massachusetts, collecting data about the mistreatment of the mentally ill, seeking support from the public and from politicians, and testifying before state legislatures; she gave testimony in at least 12 states (Lightner, 1999). Dix's testimony led to improvements in many facilities and the establishment of 40 public mental hospitals in the United States and Europe (Hothersall, 2004).

Dorothea Dix refused to allow the first North Carolina asylum (established in the countryside outside Raleigh in 1851) to be named after her. She did, however, agree to have the site named Dix Hill after her grandfather, Doctor Elijah Dix.

Dix's actions clearly led to consciousness raising and to improved treatment; however, some factors at work in the middle to late 1800s conspired to create another wave of decline in treatment in the United States. One was the Civil War and another was the speed with which Dix's new ideas about moral treatment spread; mental hospitals quickly became overcrowded and finances were insufficient to care for all inmates (Bockoven, 1963). With the financial and other strains, these mental hospitals largely become custodial. In 1908, however, another American took action that helped the cause of the mentally ill. Clifford Beers, a former mental patient who had resided in the Hartford Retreat for several years, wrote a book, *A Mind That Found Itself*, describing his struggles with mental illness and his experience in the Hartford Retreat. He was an advertisement for the possibility of recovery, and with the help of famous people, including Theodore Roosevelt, a national organization was created in 1909: the National Commission for Mental Hygiene. Although this was a promising move, again, treatment of the mentally ill did not progress much initially as both the Great Depression and World War II made it impossible to finance the types of changes that were needed.

In addition to Dix and Beers, another American made significant contributions to mental health issues in the late 1800s and early 1900s. This person was Lightner Witmer, who in 1896 founded the first psychological clinic in the United States at the University of Pennsylvania. The clinic conducted assessments of children's cognitive functioning and to a lesser extent their emotional functioning, doing the type of work that modern school psychologists do. Witmer had been trained as an experimental psychologist under German Wilhelm Wundt and American James Cattell. However, he believed that psychology should establish an area that was devoted to the understanding and treatment of the mentally ill, as a complement or alternative to psychiatry (a branch of medicine). In 1907 Witmer founded a new field, clinical psychology. He established a journal, *Psychological Clinic*, which was a forum for descriptions and reports of clinical cases. Until the late 1940s, clinical psychologists were primarily involved in assessments; treatment of mentally ill patients, which involved psychotherapy or biological treatments or both, was the domain of psychiatrists (who were medical doctors). When World War II created an influx of individuals who needed psychological help, by beginning to conduct psychotherapy, clinical psychologists became rivals to psychiatrists.

Europe in the Late 19th and Early 20th Centuries: Sigmund Freud, the Talking Cure, Transference, and Psychoanalysis

While Dix, Beers, and Witmer were doing their work in the United States, significant advances in treatment were occurring in Europe. In Austria, from 1880 to 1882, Josef Breuer—a medical doctor who specialized in treating hysteria (a condition in

which psychological problems are expressed as physical symptoms)—treated a complex and fascinating patient, Bertha Pappenheim. Pappenheim, whom Breuer referred to as Anna O so that she might maintain anonymity, suffered from a number of hysterical symptoms, including paralyses of her right side and part of her left side, problems with vision, hallucinations, a variety of speech problems, and altering states of consciousness between a typical depressed and anxious one and a state in which she was agitated, mischievous, and accusatory. Breuer could not find a physical cause for her symptoms. His treatment largely became one of listening. Shortly, he and Anna discovered that if Anna was able to remember the origin of a symptom, the symptom often disappeared. For instance, one symptom was paralysis of her arm. She realized that the symptom first appeared when she was sleeping during a time that she was supposed to be nursing her dying father. While asleep, she had a dream that a large, black snake was moving toward her father. She was unable to move her arm to shoo the snake away. When she awoke, her arm was paralyzed. When Anna remembered the origin of the paralysis and described it to Breuer, the paralysis went away. Whenever Anna would describe these episodes that led to symptoms, she was highly emotional. Breuer said that she was undergoing a catharsis or emotional release. Anna described the release of her symptoms as "chimney sweeping," and Breuer later called it the *talking cure* (Clark, 1980). The talking cure became the foundation of all talk therapy, and Anna herself is perhaps "the best known of all psychotherapy patients" (Hollender, 1980, p. 797).

Anna O and Josef Breuer may never have become so well known had it not been for Breuer's younger friend and colleague, Austrian medical doctor Sigmund Freud. Breuer and Freud met in the early 1880s, and Breuer soon told Freud about Anna O. Freud was fascinated with the case and eventually convinced Breuer to coauthor a case study with him as part of a collection of cases that they published in 1895 in the book *Studies on Hysteria*.

Freud established his own practice for treating hysterical patients, also in Vienna, in 1886. He started by using standard treatments of the time, such as massage, baths, rest cures, and electrotherapy, but by 1889 had switched to hypnotism, which was being used by several doctors throughout Europe. Two French physicians, Hippolyte-Marie Bernheim and Ambroise-Auguste Liébeault, showed that hysterical symptoms could be produced in otherwise psychologically healthy people through hypnosis. These demonstrations further reinforced Freud's developing idea that mental illness was psychogenically (psychologically) caused. However, over time, Freud found that hypnotism was only successful in some cases. Some patients were not hypnotizable, and Freud began to believe that the relationship between the patient and therapist was the most important aspect of treatment and that the use of particular techniques was relatively less important.

Freud switched from the use of hypnosis to a new technique: free association, in which the patient says everything that comes to mind, without censorship. Regarding the therapeutic relationship, Freud began to suspect that the patient viewed the therapist as not the therapist himself but as someone else, a person who is important to the patient. Some of this insight came from the Anna O case, in which Anna O reputedly developed a strong attachment to Breuer, enough so that Breuer's wife insisted that he terminate the therapeutic relationship (which he did, shortly after her pleas). Anna O had loved her father deeply, and he had died as she was nursing him and during the

he had died as she was nursing him and during the

time that she was seeing Breuer. Freud believed that Anna's love and attachment to her father had been transferred to Breuer. Furthermore, Freud saw this phenomenon of experiencing the therapist as someone else as potentially very helpful to the patient, as it is associated with a great deal of emotion and creates the potential for a catharsis that could help to cure the patient. Freud called this feeling, the patient's transferring of emotions from significant relationships onto the therapist, *transference*; it is a fundamental concept in Freudian psychotherapy. Though Freud interpreted Breuer and Anna O's relationship from this lens, Breuer himself disagreed with Freud's construal of the situation. This disagreement is likely what caused the loss of the professional relationship and friendship between Freud and Breuer. The two men, however, had always respected one another's work, and Freud reliably credited Breuer for the contributions that he made to Freud's theory of the mind and psychotherapy, the theory of psychoanalysis.

Freud wrote a number of papers on psychotherapy technique, describing free association, transference, and many ideas and techniques not described here, ranging from the application of technique—such as when the therapist should make interpretations to the patient, observing and analyzing resistance in the patient, and interpretation of dreams—to the more practical, including how much money to charge and why the therapist should sit behind the patient (one reason is so that the therapist does not have to suffer being stared at; see Freud & Gay, 1989). Freud's contributions to treatment are invaluable, and it is no wonder that Freud is considered by many to be the most famous psychologist of all time.

The First Two-Thirds of the 20th Century: Psychotherapy Comes to America and Treatment Options Expand

Many therapists followed Freud's lead, the more famous ones making modifications to Freud's theory of treatment. The list of names is quite long, including Carl Jung, Alfred Adler, Otto Rank, and Sándor Ferenczi. A number of people who had been trained by Freud or Freud's followers immigrated to the United States following World War I, particularly if they were Jewish. Examples included Erik Erikson and Karen Horney. Additionally, after World War I, some Americans had gone to Europe to be trained in psychoanalysis after learning of the success that psychoanalysis had in treating severe neurosis, from which a number of war veterans suffered (Alexander & Selesnik, 1966). Because of these events, psychotherapy had established itself in the United States during the 1920s. Psychotherapy at this point, however, was conducted almost exclusively by medical doctors and was expensive; psychotherapy was not an option for most Americans or Europeans. Additionally, Freudian psychotherapy was appropriate for moderate mental illness but generally not appropriate for very severe illness such as schizophrenia, in which patients suffer from hallucinations and delusions (fixed, false beliefs that are often bizarre such as believing that one is a famous person or that one is receiving messages from another planet).

For the seriously disturbed, some of the humane (but generally not curative) treatments continued through the first half of the 20th century such as spas and rest cures. Additionally, a number of radical treatments were developed and implemented in both the United States and Europe. For example, in 1935, Egas Moniz, a Portuguese neurologist, conducted what was probably the first prefrontal lobotomy, a procedure

that involves drilling holes through a patient's skull to destroy some of the tissue of the frontal lobe. Moniz reported successful results in most of his patients, and three Americans, John Fulton, chair of Yale University's Department of Psychiatry, neuropsychiatrist Walter Freeman, and neurosurgeon James Watts, enthusiastically adopted and promoted the procedure (Hothersall, 2004). Freeman and Watts began performing lobotomies in 1936 and had completed 1,000 by 1950. The worldwide acceptance of this procedure can largely be attributed to their reports of positive results (Hothersall, 2004). However, Moniz, Freeman, Watts, and others failed to discuss the common, often devastating side effects such as lack of emotion, mutism, lack of motivation, slowed-down movement, and even loss of the patient's former personality. By the early 1950s, in many countries, the medical professions had recognized the cruelty and destructiveness of the technique, and it was banned in many countries. By that point, however, tens of thousands of people had been lobotomized worldwide, often changing their personalities, cognitive abilities, and other psychological characteristics permanently. Other radical biological treatments included induction of coma and electroconvulsive shock therapy (an electric shock applied to the scalp that travels to the brain and produces a convulsion).

In the late 1940s and throughout the 1950s, a new type of biological treatment came into use: psychoactive medication. In the 1940s, Australian psychiatrist John Cade discovered that lithium compounds relieved symptoms for patients suffering from manic depression (now called bipolar disorder). By the 1950s, another drug, chlorpromazine, was widely used to treat schizophrenia in the United States and Europe. Two other large classes of psychoactive drugs have now been used for decades: antidepressants and anxiolytics (drugs used to treat anxiety). Unlike the lobotomy and other biological treatments, many medications were found to be quite helpful, often with acceptable (sometimes hardly noticeable) side effects. For instance, at least half to two-thirds of patients who take antidepressant drugs for depression are helped by them (Julien, 2007), often with minimal or no side effects. Additionally, research shows that antipsychotic drugs reduce symptoms in many individuals with schizophrenia (Julien, 2007). Unfortunately, however, antipsychotic drugs are typically associated with side effects, sometimes serious ones.

As biological treatments improved in mid-century, so did psychotherapy options. World War II produced an even larger number of traumatized veterans than did World War I. This created pressure to come up with psychotherapy options that would be more affordable to the general public. As mentioned earlier, in the late 1940s, clinical psychologists began conducting psychotherapy; patients now had the option of seeking treatment from someone other than the expensive medical doctors (psychiatrists). Also, new approaches to psychotherapy came into existence, alternatives to Freudian psychotherapy. From a Freudian perspective, psychological suffering is due to unconscious conflicts and mental health results only when unconscious factors are brought into consciousness. Achieving this goal takes time. The newer perspectives—including the humanistic and existential therapies, cognitive therapy, and cognitive-behavioral therapy, all of which originated in the 1940s and 1950s—have different treatment goals that can typically be achieved in less time. Additionally, different treatment modalities (in addition to the traditional one client–one therapist modality) originated during this time period: group, couples, and family therapy. Also, beginning in the 1950s, most health insurance plans began to cover or partially cover private psychotherapy. In sum,

by the 1950s, the mentally ill had both more treatment options and more affordable options. As a result, receiving psychotherapy and other treatments is much more common and socially acceptable now than it was decades ago.

In the United States in 1963, the Community Mental Health Center Act was passed, and similar acts were passed in other countries over the next 20 years. An attempt to respond to the inhumane conditions in public mental hospitals, these acts provided that mentally ill patients be treated in their communities, receiving, as necessary, inpatient treatment, outpatient care, preventive care, and aftercare. In the United States, this act and the widespread use of medications for serious mental illness such as schizophrenia are largely responsible for the deinstitutionalization that started in the 1960s and continues today. In 1955 in the United States, on any given day, about 600,000 people were housed in public mental institutions. By 2006, there were about 40,000 per day (Torrey, 2006). Medications and the community mental health philosophy have helped some of the seriously disturbed to live more normal lives. However, other social problems have taken the place of inhumane restraint in mental hospitals, particularly homelessness of the mentally ill and the revolving door syndrome, in which patients are released into the community, institutionalized again shortly after, released again, admitted yet again, and so forth (Torrey, 2006).

The Last Third of the 20th Century and the Early 21st Century

In the last third of the 20th century, additional developments have occurred regarding treatment. One is a focus on prevention and mental wellness. Community programs now focus on attempting to correct the social conditions that increase the likelihood of psychological problems (e.g., violence in the community, poverty, teen parenthood). Additionally, some traditional mental health practitioners, such as clinical psychologists, psychiatrists, and social workers, may now integrate preventative treatments into their practice. Clients may be educated about stress-management techniques (meditation, visual imagery, muscle relaxation, anger management, assertiveness training), exercise, proper nutrition, and new coping skills. Also, complementary and alternative treatments are available for psychological ills and promoting wellness such as acupuncture, light therapy, and dance therapy.

Another relatively modern development is multicultural psychology. As the United States has become increasingly ethnically diverse, those involved in the study or treatment of mental illness have come to realize that mental health may be viewed differently by people from different cultural backgrounds and that clients' cultural backgrounds clearly have an impact on effectiveness of particular treatments. In fact, results of a number of studies reveal that members of minority ethnic groups benefit less from psychotherapy than members of majority groups (e.g., Mark, Palmer, Russo, & Vasey, 2003; Sue & Sue, 2003). Given these and other research findings, some clinicians have responded by developing culturally sensitive therapies, psychotherapy approaches devoted to addressing the distinctive issues faced by members of particular minority groups (Mio, Barker-Hackett, & Tumambing, 2006; Prochaska & Norcross, 2003). Multicultural psychology is a rapidly evolving discipline.

The history of treatment of the mentally ill has followed a winding path, with periodic moves toward humane treatment, followed by deterioration of treatment, followed again by improvement. Overall, treatment has improved. Many options are currently available, both psychological and biological, and these options are accessible

to more people than had access in the past; more from lower socioeconomic status groups may now benefit, and treatment of ethnic minority groups has improved. However, societies have a long way to go to achieve true moral treatment. For instance, in the United States, at least 100,000 people suffering from schizophrenia are homeless on any given day, and at least 135,000 additional people with schizophrenia are inmates of jails or prisons (Torrey, 2006).

The history of the way mental illness is viewed has likewise followed a crooked path. Early conceptions of mental illness were both somatogenic and psychogenic. During the Middle Ages the dominant view was that mental illness was caused by possession by the devil. Since then, and still today, somatogenic and psychogenic perspectives on mental illness have coexisted. An individual patient may receive both biological treatment (such as medication) and psychological treatment, usually psychotherapy.

Testing and Assessment of Emotion

The assessment of emotions and emotional traits has developed in response to at least three different (but sometimes overlapping) concerns. Each assessment tradition has developed in parallel fashion, taking advantage of lessons learned from the other traditions. First, professionals including psychologists see the value in assessing both normal and abnormal personality (which includes emotions) for hiring and job placement and for other occupational or vocational purposes. Second, psychiatrists, psychologists, and other mental health practitioners are interested in assessing abnormal personality and emotions to diagnose and treat clients. Third, researchers in many fields are engaged in studying emotions and must find ways to measure emotions to conduct their research.

Roots of Testing through World War I: Assessment of Cognitive Traits Develops Rapidly

The occupational assessment tradition has a long history. Around 165 BC, the Chinese began administering examinations measuring the knowledge and abilities of individuals to determine whether they were qualified and fit for civil service positions (Bowman, 1989). Although the Chinese did not focus on measuring emotions, their assessments were probably the first psychological tests in history, in any society.

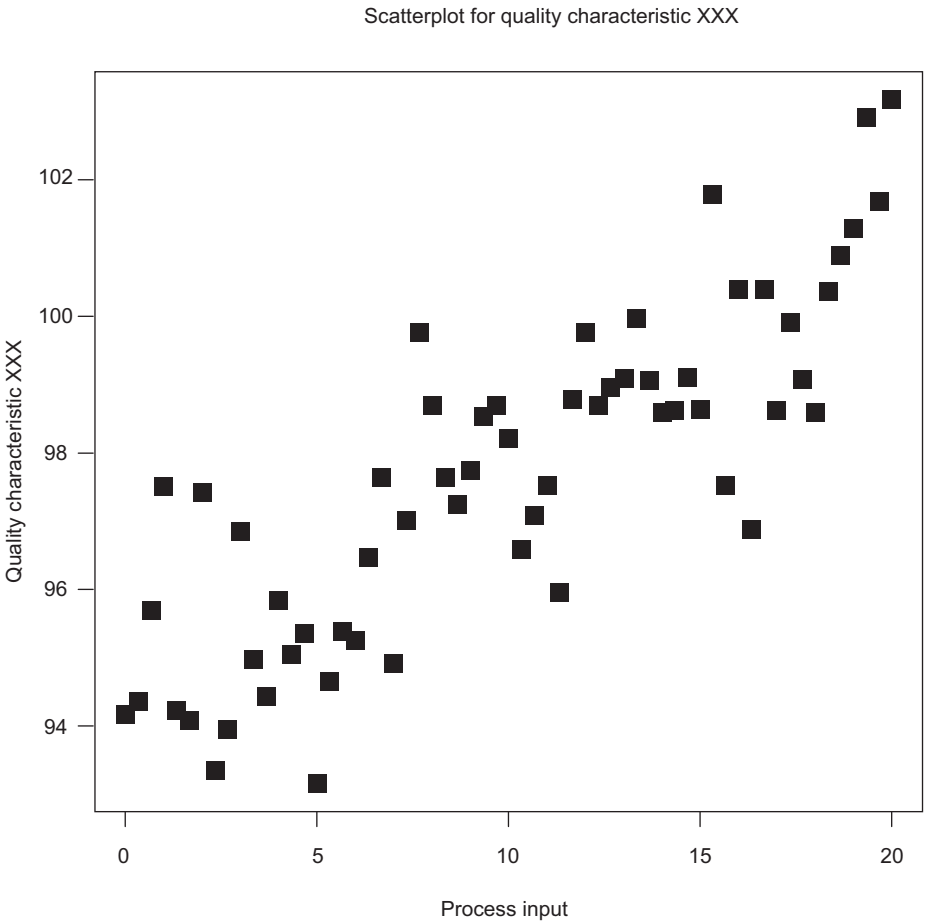
Examinations have been used in the educational system in Europe since ancient times. As DuBois (1970) describes, these early examinations (measures of cognitive, but not emotional, qualities) were oral; written examinations did not begin until a few centuries after paper replaced papyrus and parchment (in the 1100s). Clearly, written tests began by the 1500s, when the Jesuit order began administering such tests to their students.

In more modern times, the most significant advances in assessment occurred in Britain in the late 1800s. British gentleman Francis Galton, educated as a medical doctor and a cousin of Charles Darwin, made numerous contributions to modern assessment. Galton's primary interest was in demonstrating that genius is hereditary. To this end, he began by developing methods for measuring intelligence. Galton reasoned that intelligence is affected by the acuity of our senses. He measured characteristics that he believed to be components of intelligence in order to develop a valid measure of the entire construct. The characteristics included visual and auditory acuity, reaction time, muscular strength, and others. Galton examined data from

his measurements, he sensed that he might discover something useful if he knew how the characteristics were related to one another. He had the insight that he could plot two different measures (e.g., reaction time and muscular strength) on a graph, producing a scatter plot, and examine the relationship between the two measures. In this process, Galton had discovered covariation of variables. With a bit more work, he created linear regression, a statistical procedure that is used throughout the sciences to predict the value of one variable (e.g., an individual's college grades) from knowledge of the value of another variable (e.g., the same individual's SAT scores). This was a highly significant advance for research in all sciences; many researchers from diverse fields have noted the invaluable nature of this contribution. Soon afterward, British biometrician Karl Pearson built on Galton's work and created the first correlation coefficient, Pearson's rho (designated by r or ρ).

Galton helped to advance the field in additional ways. He was the first person to develop a self-questionnaire, another method that is used frequently in research in the social sciences and in assessment of all types of traits including emotional ones. To demonstrate that genius runs in families, Galton produced a survey that he presented to the 200 individuals in the Royal Society of England, asking them about their character traits; racial, religious, social, and political backgrounds; education; physical traits; and other qualities. Questions of particular interest to Galton centered around society members' beliefs regarding the origin of their interest in science. Was it innate or learned? Based on the responses, Galton (1874/1970) concluded that scientific interest was largely innate and published his results in his 1874 book *English Men of Science.* Among Galton's other contributions to the measurement of psychological characteristics were development of a word association test and the twin study method for comparing the influences of heredity and environment on a particular trait.

A second figure who was influential in late-19th and early-20th-century assessment was James Cattell, an American who studied in Germany with the famous psychologist Wilhelm Wundt and then collaborated with Galton in Britain. Cattell was interested in Galton's attempts to measure intelligence and was determined to show that Galton's ideas were valid. Cattell collected measures that were similar to Galton's (reaction time, sensory acuity, etc.) on college students. In 1890, he wrote an article about his research project titled "Mental Tests and Measurements" and published it in the journal *Mind.* This was the first time the term *mental tests* was used in an article (Benjamin, 2007), and the article itself inaugurated the mental-testing movement. Several years later, after collecting data on a sample of college students and using the correlation coefficient newly developed by Pearson, Cattell and a graduate student correlated the test results of students with their grades (Wissler, 1901). To their surprise, they found that no relationship existed between Cattell's measures and grades. This individual disappointment did not discourage Cattell, nor did it slow the development of the testing movement. By the early 1900s, mental testing was becoming a business in America. In fact, Cattell, along with two former students, Robert Woodworth and Edward Thorndike, founded one of the first corporations to sell psychological tests, the Psychological Corporation, in 1921. They saw corporations, the government, and the education field as potential clients. This made testing commercial and helped to increase its influence and popularity. Cattell and others showed that tests could serve important social functions, aiding in the selection and training of people and helping to detect psychological problems.



A scatter plot is a type of mathematical diagram using coordinates to display values for two variables (for instance, reaction time, and muscular strength, as discussed in this chapter) for a set of data. The data is displayed as a collection of points, each having the value of one variable determining the position on the horizontal axis and the value of the other variable determining the position on the vertical axis. It is used to display the type of relationship (if any) between two variables. (ABC-CLIO)

Cattell was dismissed from Columbia at age 60 because of his public opposition to the draft for World War I.

Assessment of cognitive traits developed more rapidly, and initially in a more sophisticated fashion, than the assessment of emotional traits. The early 1900s saw the development of the first valid intelligence test in France, the Binet-Simon test; the scores did in fact correlate with grades. The Binet-Simon test was exported to the United States, and in both Europe and the United States, intelligence tests were soon used in the schools. Additionally, within three months of the United States entering

World War I, a team of psychologists had created two tests designed to measure intelligence in enlistees and draftees. The Army Alpha was used for people who were literate, and the Army Beta, a pictorial test, was used for people who were illiterate. By the end of the war, 1.7 million people had taken the test; the tests met with such success that James Cattell said that the war had put psychology "on the map" (Hothersall, 2004).

Robert Woodworth, one of the psychologists who later aided Cattell in the founding of the Psychological Corporation, developed a test to screen mental health of draftees and potential enlistees. The main motive of the army was to identify people who would later succumb to shell shock, viewing these individuals as psychologically weak (Benjamin, 2007). This test was called the Woodworth Personal Data Sheet and was the first questionnaire designed to measure abnormal personality (DuBois, 1970). It was technically a flawed test; it straightforwardly asked about abnormal behaviors and experiences and thus was easy to fake. The test, published in 1919, had not been used widely before the war ended, but it was a beginning in the assessment of abnormal personality and emotions.

Between the Wars: Assessment of Emotional Traits Begins to Catch Up with Assessment of Cognitive Traits

In the early 1900s, parallel with the development of cognitive and emotional tests designed for occupational purposes, professionals with clinical interests were creating personality tests primarily to aid in diagnosis. These tests were the projective tests, based in psychodynamic (Freudian) theory and designed to assess unconscious characteristics. Projective tests consist of test items or stimuli that are called *ambiguous*, meaning that the stimuli are subject to a wide variety of interpretation and lead to a large range of responses. Examples of ambiguous stimuli include inkblots, pictures, single words with which an individual is asked to make an association, and incomplete sentences. (Sentences that are used in typical questionnaires, such as "I enjoy going for walks," are considered relatively unambiguous, and the domain of responses that result [e.g., rating on a scale of 1 to 5 or responding true or false] is finite.) Because Freudians are interested in measuring unconscious characteristics, they must measure these characteristics indirectly rather than asking directly, since the individual is unaware that he possesses them. Use of projective tests is based in the *projective hypothesis*, which states that given an ambiguous stimulus, an assessee (person taking a test) will project her characteristics onto the stimulus, meaning that her responses will reveal something about her personality characteristics.

The first highly successful projective test was the Rorschach Psychodiagnostic Technique (also known as the Rorschach Inkblot Test), created by Swiss psychiatrist Hermann Rorschach. Rorschach (1921/1998) introduced his test with the publication of his book *Psychodiagnostik* in 1921, in which he described how he used his 10 inkblots, which he created himself, to diagnose psychiatric patients. The Rorschach is still very commonly used, remaining among the top 10 most frequently used psychological tests by clinical psychologists in the United States (Camara, Nathan, & Puente, 2000). The test still consists of the same 10 inkblots that were used in 1921. Other popular projective techniques, all originally developed in the first half of the 20th century, are the Thematic Apperception Test, the Children's Apperception Test,

Machover Draw-A-Person Test, and sentence completion tests. Projective tests, though controversial in some ways, remain popular today.

The 1940s brought significant development in the testing of emotional traits. Psychologist Starke Hathaway and psychiatrist J. C. McKinley, both of the University of Minnesota, created the Minnesota Multiphasic Personality Inventory (MMPI), an inventory (questionnaire) designed for diagnosis of psychiatric illness. The MMPI was developed to be used independently of any particular psychological theory (e.g., Freudian, Jungian, or behavioral). The scales that measure psychiatric conditions (e.g., depression, schizophrenia, hypochondriasis) were developed with built-in validity: items for each scale were selected only if they were proven to distinguish between individuals diagnosed with the condition and individuals not diagnosed with the condition. Another benefit of the MMPI is that it includes scales that are designed to detect lying, faking, and random responding on the test, an aspect of the MMPI that further increases its validity. The MMPI was a success soon after its release and remains the most widely used of all abnormal personality tests in the United States, and possibly in the world (e.g., Camara et al., 2000).

In 1949, a few years after the publication of the MMPI, a small group of psychologists was awarded a grant by the Rockefeller Foundation to start a new research institute at the University of California, Berkeley. This organization, the Institute of Personality Assessment and Research (IPAR), was originally created to develop new and better methods of personality assessment. One of its best successes as a personality test was published within a few years of the founding of IPAR, the California Psychological Inventory (CPI), by psychologist Harrison Gough. The development of the CPI was modeled after the development of the MMPI but was intended to measure general, or normal, personality traits such as dominance, sociability, independence, responsibility, empathy, and self-control. In creating the test, Gough and colleagues wrote a large number of items; they had permission to use MMPI items and administered this large pool to a total of 13,000 people of both sexes, diverse in socioeconomic background and age. The items would be used to develop separate scales for the specific traits (dominance, sociability, etc.). To determine if the items were measuring what they intended to measure (i.e., a particular trait), Gough and his collaborators had a sample of research participants rated by their friends, then compared participants' self-ratings with their friends' ratings. Those items that did not produce similar results between participants and friends were omitted. More than 20 personality traits are assessed using the CPI. For several decades, the CPI was the most frequently used of the normal personality tests. The CPI is most often used in employment contexts (e.g., for hiring and placement and to improve interpersonal relationships between employees) and in research. The CPI is still a popular test, but other normal personality inventories have been developed more recently, in particular, those that assess the five-factor model (extraversion, neuroticism, agreeableness, conscientiousness, and openness). These five-factor model tests are becoming the most widely used of the tests assessing normal personality.

Personality testing thus exploded in the 1940s and 1950s, beginning with the MMPI. Both projective tests and personality inventories, measuring either normal or abnormal personality, were popular, and assessment of personality was customary in both clinical and occupational contexts. Clinicians and other psychologists began to engage in lively debates about whether using test results in a statistical fashion for

prediction or using more subjective clinical prediction was better (e.g., Meehl, 1954). Additionally, knowledge about test construction had advanced enough that the American Psychological Association created standards for test development (American Psychological Association, 1954).

The 1950s also saw the creation of America's first modern diagnostic classification system for mental disorders. The first edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) was published in 1952. The manual lists mental disorders; about 300 are listed currently. Each disorder is detailed in an entry that lists and describes symptoms that are required for diagnosing the disorder and other characteristics typical of the disorder. Each entry also covers (if information is available) general prevalence of the disorder, prevalence among specific groups (e.g., gender, ethnic, and socioeconomic prevalence), typical age of onset, predisposing factors, typical course of the disorder, and other information. The manual is revised periodically, about every 10 years, on average. The fourth edition of the *DSM*, the *DSM-IV-TR* (*TR* stands for "text revision"), was published in 2000.

Alternative Assessment Approaches in the 1960s and 1970s

A challenge to personality testing arose in the late 1950s. The radical behaviorism movement in psychology called into question the importance of measuring inner mental processes or traits such as thoughts, emotions, or personality. According to behaviorists, only overt behavior can be measured objectively. Measuring personality and other inner variables requires that we rely on the report of the person who presumably possesses these qualities. Because she is the only person who knows what she thinks or feels, these factors are unverifiable. Conversely, two or more people can observe behavior and agree that it has occurred; measuring observed behavior is objective. Therefore, according to behaviorists, traditional personality tests, measuring unverifiable, hypothetical qualities, produce results that are subjective and unscientific. The alternative to traditional personality assessment, proposed by the behaviorists, is behavioral assessment, which involves observing behavior and the circumstances that surround the behavior (i.e., description of the general context and what transpired before and after the behavior). Behavioral assessment gained in influence through the 1960s and 1970s.

Additional change and development in assessment occurred in the 1970s. Neuropsychological assessment, which measures brain-behavior relationships in people with suspected brain damage or some psychiatric disorders, became an official domain of psychologists; in 1979, Division 40 of the American Psychological Association, the division of clinical neuropsychology, was established. Neuropsychological assessment includes batteries of cognitive and personality tests and often includes brain imaging techniques such as electroencephalography (EEG), functional magnetic resonance imaging (fMRI), and positron emission tomography (PET). In additional to their clinical applications, these scans can be used for research on cognitive processes and both normal and abnormal emotions.

Development of Research Instruments Occurred Relatively Late

Many of the tests and instruments described earlier can be used for research on emotions and personality (either normal or abnormal). Examples of tests that have been frequently used as research instruments since their introduction are the Rorschach

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Psychodiagnostic Technique, the MMPI, the CPI, and brain scans. However, in general, research that focused specifically on emotion (as opposed to general personality) prior to the 1980s more commonly focused on abnormal emotion (as opposed to normal emotion) because abnormal psychology was the interest of clinicians. Additionally, as LeDoux (1996) describes, emotion as a general topic of study, as an object of basic science, was a relatively underemphasized field compared to other fields in psychology (with the exception of particular significant contributions, a number of which are described in the early part of this chapter), until the 1980s. LeDoux discusses paradigms in psychology, including behaviorism and cognitive science, which interfered with the development of the study of emotion. According to LeDoux, a breakthrough occurred when psychologists such as Zajonc, in 1980, began to view emotions as very different from cognitions.

Nonetheless, some tests for normal emotions did develop prior to 1980. For instance, Paul Ekman's Facial Action Coding System (FACS) was created in the 1970s as a system for categorizing and classifying facial expressions. Ekman and colleagues, including Carroll Izard and Sylvan Tomkins, found that particular facial expressions tend to be associated with particular emotions across cultures (for reviews, see Ekman, 1972, 1973; Izard, 1971). FACS has been used in the study of emotion since it was developed and has gained in popularity over the past years. Many other leading instruments were developed after 1980, however. The Positive and Negative Affect Schedule (PANAS), published in 1988 by Watson, Clark, and Tellegen (Watson, 1988), is frequently used to address basic questions about emotion. For example, Watson (2002) used the PANAS to attempt to answer the question, Can we experience positive and negative emotions at the same time? The 1980s and 1990s brought about another change in research on and thinking about emotion: the field began to study positive emotions more, rather than focusing nearly exclusively on negative emotions. The PANAS has been used for this purpose, as have other measures, such as the Satisfaction with Life Scale, which was published by Diener, Emmons, Larsen, and Griffin in 1985.

Another trend in assessment of emotions is tests that measure single emotional traits. For instance, the Beck Depression Inventory, a short screening tool for depression that is still frequently used, was published in 1961 (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Other examples of single-emotion inventories are the State-Trait Anxiety Inventory, published in 1970 (Spielberger, Gorsuch, & Lushene, 1970), and the State-Trait Anger Expression Inventory (Spielberger, 1988), both written by Charles Spielberger.

Testing since the 1990s

Testing is big business. Tests of achievement and intelligence have fared well, with national policies such as No Child Left Behind (2001) in the United States compelling their use. Personality testing is also common; the threat to general personality assessment, brought on by the rise of behaviorism in the 1960s, diminished in the 1980s for a number of reasons. One reason was that researchers were better able to demonstrate the existence of personality, showing that personality traits can be stable across time and situations (e.g., Costa & McCrae, 1988; Epstein & O'Brien, 1985). Another factor was the creation of more tests with demonstrated validity such as the

with demonstrated validity such as the

Millon Clinical Multiaxial Inventory, a measure of abnormal personality and a current rival to the MMPI, first published in 1969, and the NEO-Personality Inventory, a measure of the five-factor model (normal personality) published in 1992.

Since diagnosis and treatment and, later, job placement have been of concern since people began settling in societies, we have a long history of attempts to measure psychological traits, including emotional ones. More recently in history, there has been greater motivation to study emotions, both normal and abnormal, in systematic research studies. Other applications of tests of emotional traits not described in this chapter include forensic uses such as providing evidence for insanity pleas, child custody disputes, and worker's compensation claims. Tests are also used by school psychologists and for career counseling. Testing experts regularly attempt to predict the future of the assessment field; most are currently predicting that testing will only gain in popularity in the near future (e.g., Ornum, Dunlap, & Shore, 2008).

Conclusions

In this recounting of history, we see that emotions are vitally important to people, both at individual and collectivist levels. We often feel our own experiences deeply. Many of us care about the mentally ill and want to see them diagnosed properly and treated effectively, both because we have empathy and because we recognize that society benefits from humane treatment of the mentally ill. We recognize the individual and societal benefit of assessing emotional traits to aid in hiring and other occupational decisions.

Much progress has been made in understanding emotion. With each passing decade, we learn more about emotional disorders and gradually develop more effective treatments. We have evidence that many of our assessment tools aid us in making decisions about the mentally ill and in selecting competent people for occupations. Thinking about emotions as functional serves us well and has propelled the field forward. Yet we have a long way to go to relieve emotional suffering, to improve well-being, and to fully apply the knowledge that we are gaining from basic research in emotion. The emotion field is one of the most exciting and promising fields in psychology today.

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A

ABC Model of Emotional Reaction

In the 1950s, American psychologist Albert Ellis introduced rational emotive therapy, arguably the beginning of modern cognitive therapy (Arnkoff & Glass, 1992). Rational emotive therapy is based on a theory of emotional reaction that Ellis called the *ABC model*. Ellis proposed that many of our emotional reactions are actually mediated by beliefs, meaning that after an event occurs and before the emotional reaction, beliefs occur in the middle, and the beliefs affect the emotional reaction.

Ellis said that we have a commonsense and an incorrect view of the way that we emotionally react to events. The commonsense view is that an event occurs (which he called "A" for "activating event") and an emotional reaction (which he called "C" for "emotional consequence") naturally follows. For example, the event could be that you threw a party, and very few people attended. Your emotional reaction is extreme depression and anger (see Table 2).

Table 2: Commonsense View

A		C
Activating event (hosted party and hardly anyone came)	→ →→→→→→→→→→→ →	Emotional consequence (depression, anger)

According to Ellis, the commonsense view is incomplete in its accuracy. To have an emotional reaction, Ellis says, we must have interpretations of the event first, which he called "B" for "beliefs." Beliefs vary in terms of how rational they are. Emotional consequences are caused most directly by the intervening beliefs (see Tables 3 and 4).

Table 3: Ellis's View with Irrational Belief

A		B		C
Activating event (hosted party and hardly anyone came)	→	Irrational belief (Nobody likes me. I am unlovable. People are mean. I will never meet nice people.)	→	Emotional consequence (depression, anger)

Table 4: Ellis's View with Rational Belief

A		B		C
Activating event (hosted party and hardly anyone came)	→	Rational belief (I just moved here and haven't formed strong relationships yet. I will be more friendly with my neighbors and coworkers and will have another party later).	→	Emotional consequence (disappointed but still hopeful)

As shown in Tables 3 and 4, beliefs greatly determine emotional consequences. Individuals have some control over their beliefs and can thus intervene before the emotional consequence. It is most healthy to choose rational beliefs as interpretations and avoid irrational ones. Irrational beliefs tends to be absolutes, characterized by black-and-white thinking in which shades of gray are not perceived. They are often associated with *should*s and *must*s (e.g., "to be loved, I *must* be kind all the time" or "I *should* do all the work my boss asks me to, even if I have to work overhours"). Rational beliefs are less extreme; they are more conditional and tentative. When this model is utilized in therapy, Ellis suggests adding a "D," which means that the irrational beliefs are disputed. The therapist guides the client to challenge the beliefs. Using the belief "nobody likes me" as an example, the client will consider the following: what type of evidence contradicts the belief? (Here the client is prompted to think about individuals who have liked him.) Is there really any evidence to support this belief? What worse things can *actually* happen given the event that occurred? With a more positive interpretation of the event, what are some favorable things that can happen?

Ellis and Harper (1975) wrote a practical and accessible book, *A Guide to Rational Living*, in which they explain how the ABC model can be applied in a variety of real-life situations. The ABC model is still widely taught in many fields of psychology, including clinical, health, and personality, and in some fields outside of psychology, such as medicine.

See also Albert Ellis, cognitive therapy and cognitive-behavioral therapy, rational emotive behavior therapy.

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Acceptance

Acceptance refers to the experiencing of a situation that may be felt as unpleasant, without attempting to change it, defy it, or escape from it. The term can mean that the acceptance is behavioral only, but more often means that the acceptance includes feelings and thoughts that are consistent with the behavioral acceptance. Acceptance is a concept in Eastern spirituality, such as Taoism and Buddhist mindfulness, and in Western psychology. Acceptance is recommended when the situation is undesirable and either unchangeable or potentially changeable only by incurring significant risk.

In the *Tao Te Ching*, written over 2,500 years ago, Lao Tzu describes an attitude of acceptance toward life. Lao Tzu writes about a universal energy that has a natural rhythm. A more satisfactory life means moving in concert with the energy of the universe, not against it. Swimming against the tide can drain one's energy, proving harmful or possibly even fatal.

The Serenity Prayer, which is most often attributed to American theologian Reinhold Niebuhr, who is presumed to have written it sometime between the mid-1930s and the 1950s, conveys the importance of acceptance: "Lord, grant me the serenity to accept the things I cannot change, the courage to change the things I can, and the wisdom to know the difference." The Serenity Prayer has been adopted by Alcoholics Anonymous and other 12-step groups and is referenced frequently in popular culture such as television shows, movies, and popular songs. Niebuhr's authorship of the prayer has been disputed (e.g., Shapiro, 2008).

Psychiatrist Elisabeth Kübler-Ross (1969) wrote about a psychological process that one goes through when diagnosed with a terminal illness. According to the theory, after the stages of denial, anger, bargaining, and depression, one enters the final stage: acceptance. With acceptance, the individual is able to move on to other things in life rather than being completely absorbed with the dramatic emotions involved in the anger, bargaining, and depression stages; true acceptance brings inner peace. The path to acceptance is very painful, however, and people will not always arrive at acceptance, even over many months or possibly years. As Kübler-Ross and others described later, these stages may apply to any loss, including losses of a loved one due to death or abandonment, a job, a dream, and many other examples. Kübler-Ross also later amended her theory, saying that individuals can sometimes skip one of the stages.

Research indicates that acceptance can lead to positive outcomes for people. For instance, Morling and Evered (2006) reviewed research on a coping mechanism

called *secondary control* that involves both acceptance and adjusting some aspect of the self when facing a challenging life event or circumstance. In their review of diverse research studies, Morling and Evered concluded that people who use secondary control tend to have less depression and better adjustment. Additionally, adolescents who use secondary control are better able to cope with several challenging stressors, including family poverty and having a parent who suffers from depression.

See also mindfulness.

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Acupuncture

Acupuncture is a form of treatment that differs from traditional Western therapeutic approaches that focus on directly treating visible anatomical parts or paths, for example, organs, nerves, and blood vessels. The goal of acupuncture is to diagnose and treat imbalances in the body's *Qi* (or *chi*, "life energy") by improving or changing the flow of Qi along the 12 meridians, or energy pathways, of the body. The flow of Qi is transformed by inserting hair-thin acupuncture needles (sometimes with the addition of electrical current or burning herbs) or placing finger pressure (acupressure) at specific points along the meridians. Though acupuncture has been practiced for over 3,000 years in China, it was not until the 1970s that acupuncture gained relative acceptance among practitioners of Western medicine. Based on Taoist traditions and philosophy, acupuncture is used to restore harmony to the body, mind, and spirit by drawing on the individual's natural healing capacity and rebalancing the distribution and function of yin and yang. Yin and yang represent the major forces of the universe—creation and reception—and the yin-yang concept exemplifies the duality inherent in all creations, for example, male and female, cold and heat, and light and dark. The yin-yang philosophy maintains that there is always some amount of yin in that which is primarily yang and vice versa.

In the Chinese medical philosophy, body, mind, and spirit are never completely separate: a physical problem may reflect an emotional or spiritual imbalance, and any effective treatment must consider all aspects of the imbalance. In addition to being used to treat physical ailments and for surgical and dental anesthesia (e.g., Lore, 2005), acupuncture is used to treat various psychological and emotional issues: depression, anxiety, hyperventilation syndrome, alcoholism and substance abuse, and mood symptoms associated with menopause. Some studies have shown acupuncture to be as effective as anxiolytic (antianxiety) medication to treat anxiety symptoms (e.g., Pilkington, Kirkwood, Rampes, Cummings, & Richardson, 2007), including those associated with hyperventilation (e.g., Carlson, Bruton, Lewith, & Mullee, 2007). Some studies have shown acupuncture to improve symptoms of

depression, but studies had small sample sizes or lacked control groups or symptom improvements were not maintained (e.g., Luo, Meng, Jia, & Zhao, 1998). Studies of acupuncture to treat alcoholism or substance abuse report some reductions in self-reported anxiety and drug or alcohol cravings but no significant improvements in drinking or substance abuse patterns and no long-term reduction of drug or alcohol cravings (e.g., Courbasson, Araujo de Sorkin, Dullerud, & Van Wyk, 2007). Controlled studies utilizing acupuncture did not reliably improve menopause symptoms, including hot flashes, sleep disturbances, or mood, when compared with placebo treatments or estrogen therapy (e.g., Carpenter & Neal, 2005). Some studies of acupuncture to treat psychological symptoms show promise, but there is controversy about effectiveness; many studies have design flaws, use small sample sizes, and/or lack control groups. More research is needed to evaluate the effectiveness of acupuncture to treat psychological symptoms.

See also complementary and alternative medicine.

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Acute Stress Disorder

Experiencing an extreme traumatic stressor such as military combat, sexual assault, or a natural or human-made disaster will nearly always produce a stress reaction, which includes release of stress hormones, elevated heart rate and blood pressure, release of glucose by the liver, hypervigilance, and a host of other symptoms that enable the individual to prepare to fight or flee. Frequently, individuals enduring extreme stressors develop reactions that extend well beyond the duration of a

fight-or-flight response. Individuals with extensive symptoms may be diagnosable with a stress disorder—acute stress disorder or posttraumatic stress disorder (PTSD)—described in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). The *DSM-IV-TR* is a guide to the classification of mental health disorders used primarily in the United States.

In acute stress disorder and PTSD, a person experiences intense fear, helplessness, or horror following exposure to a traumatic event. Exposure involves directly experiencing, witnessing, or learning of a traumatic event or events that involve actual or threatened death or serious injury or a threat to the physical integrity of self or others. Traumatic events may include military combat, violent personal assault (e.g., sexual assault, physical attack, robbery, mugging), kidnapping, terrorist attack, torture, natural or human-made disasters, serious automobile accidents, or being diagnosed with a life-threatening illness. Witnessed events include observing the severe injury or unnatural death of another person or seeing a dead body or body parts. Events occurring to others that are learned about include serious injury or accident or violent personal assault experienced by a family member or close friend and learning that a family member or close friend has died suddenly and unexpectedly. Stressors other than these may lead to acute stress disorder or PTSD.

Characteristic symptoms of acute stress disorder and PTSD include (1) persistent reexperiencing of the traumatic event (e.g., through distressing dreams; as recurrent, intrusive, disturbing recollections; or as flashbacks), (2) avoidance of situations and objects associated with the trauma, and (3) increased arousal or anxiety as indicated by an exaggerated startle response, difficulty sleeping, irritability, hypervigilance, or difficulty concentrating. Both PTSD and acute stress disorder may involve dissociation during or after the stressful event (including flashbacks). Dissociation may manifest as "a subjective sense of numbing, detachment, or absence of emotional responsiveness, a reduction in awareness of his or her surroundings, derealization, depersonalization, or dissociative amnesia" (American Psychiatric Association, 2000, p. 469). *Derealization* is a sense that the outside world seems strange or unreal. *Depersonalization* is a sense of detachment from the perception of the self and the body.

In acute stress disorder, symptoms occur—and resolve—within four weeks of the traumatic event. If symptoms persist beyond four weeks, a diagnosis of PTSD may be considered. The disturbance must be associated with significant distress or cause impairment in social, occupational, or other critical areas of functioning or interfere with the ability to engage in a necessary task. According to research, up to 80 percent of cases of acute stress disorder develop into PTSD (Bryant, Moulds, Guthrie, & Nixon, 2005).

Not all people develop acute stress disorder or PTSD after experiencing an extreme traumatic stressor. Personal and situational factors—including severity of the trauma, childhood experience (including poverty and psychological disorders in the family), weak social support systems, and personality traits such as low perceived control over life events—contribute to greater vulnerability of developing stress disorders. Other personality traits, such as a sense of fortitude and commitment, appear to offer some protection and help build resiliency against developing stress disorders. Mathew Friedman, director of the National Center for Posttraumatic

Stress Disorders, discusses vulnerability and resiliency factors in his 2006 book *Posttraumatic and Acute Stress Disorders: The Latest Assessment and Treatment Strategies.*

Treatments available to relieve symptoms of the stress disorders include cognitive- behavioral therapy (with and without exposure), coping skills training (e.g., relaxation, biofeedback), group therapy, family therapy, and medications.

See also depersonalization, dissociation, posttraumatic stress disorder.

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The prevalence of acute stress disorder in the United States population is not known. A few studies of people exposed to traumatic events found rates of acute stress disorder between 14 and 33 percent (American Psychiatric Association, 2000).

Adjustment Disorder

When people experience life changes such as moving, changing jobs, a child leaving home, or a breakup of a relationship, they have to adjust themselves to cope with stress caused by these events. While people are generally capable of adjusting to such changes in a relatively short period of time, a diagnosis of adjustment disorder may be indicated if the individual shows excessive distress in reaction to such a stressful event or if the symptoms she experiences cause significant impairment in functioning in social or occupational contexts.

The symptoms of adjustment disorder include feelings of anxiety, depressed mood, and "disturbance of conduct," which includes antisocial behaviors that disregard other people's rights or social norm violations, for instance, fighting, vandalism, reckless driving, and failure to meet financial obligations. In some cases, adjustment disorder is accompanied by several physical symptoms including generalized pains, headache, and heart palpitations. Thoughts of suicide may be present, sometimes involving suicide attempts. Drug or alcohol abuse may occur.

To be diagnosed with adjustment disorder, the symptoms must not more accurately reflect another disorder, such as acute stress disorder or posttraumatic disorder, both of which occur in the aftermath of more objectively serious stressors. Also, for diagnosis, the emotional reaction must occur in response to a specific life stressor or

stressors within three months of the occurrence of the stressor(s), and the symptoms may last up to six months after the end of the stressor but not longer.

Both adults and children can be diagnosed with adjustment disorder. For adults, marital issues, finances, and work problems are common triggers. Adolescents, on the other hand, are more likely to develop adjustment disorder related to school problems, perceived rejection by parents, parents' marital problems, and alcohol or drug problems (Andreasen & Wasek, 1980). The most common treatments for adjustment disorder are psychotherapy, which may be in individual, group, or family forms, and antidepressant or antianxiety medications (Mayo Clinic, 2009). Some, such as Casey (2001), argue that adjustment disorder often resolves on its own and thus treatment is generally not indicated except in special circumstances such as when risk of suicide is present.

Adjustment disorder is controversial as a diagnostic category, with some arguing that the condition is overdiagnosed largely because it is less stigmatizing than other disorders. As many as 30 percent of people in outpatient therapy are diagnosed with this disorder (American Psychiatric Association, 2000). However, in a review of the information available on adjustment disorder, Patricia Casey (2001) argues that evidence supports the validity and usefulness of this diagnostic category.

See also acute stress disorder, posttraumatic stress disorder.

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Adjustment disorder is a common condition, with a prevalence ranging from 11 to 18 percent in primary care settings and from 10 to 35 percent in psychiatric settings. Adjustment disorder is found in all cultures and in all age groups (Casey, 2009).

Affect

An affect is an automatic, physiological response to a stimulus and includes a basic evaluation of the stimulus as good or bad. Startle, surprise, and stun responses are all examples of affects (affective responses). Affects occur as reflexes to stimuli, without engaging cognitive processes.

Emotions are more complex and occur after affects; affects may be thought of as building blocks for emotions. According to Stein, Hernandez, and Trabasso (2008), an emotion involves further evaluation of the stimulus and general situation and

"encodes a plan of action" (p. 578). For example, an individual may hear a fire alarm while at school or work. A general affective response occurs, perhaps a stun response. To actually engage in the behavior of leaving the building (a plan of action), further evaluation, and possibly an emotion (such as fear), occurs. Stein and colleagues suggest that the physiological response aspect of an affect (which is arousal of the autonomic nervous system) may interfere with action. Therefore the affect may have to subside before an individual can engage in further evaluation of a situation, experience an emotion, and take action. Typically, the sequence of stimulus ⟶ affect ⟶ further evaluation ⟶ emotion ⟶ plan of action occurs very rapidly.

In discussions of emotion, both by experts and nonexperts, the terms *affect* and *emotion* are often used interchangeably. Clearly, however, this domain of discussion involves two distinct states of experience.

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Affective Personality Traits

One of the two most well-known and well-researched traits in personality psychology is primarily an affective or emotional trait. This trait, neuroticism, is a constellation of negative emotions. The other most well-known and well-researched trait, extraversion, contains positive emotion as a large component.

Neuroticism comprises three distinct and fundamental negative emotions: fear/anxiety, depression/sadness, and anger/hostility. A person who is extremely high in neuroticism is high in all three of these negative emotions, reportedly experiencing all three with frequency. Neuroticism is a trait continuum such that each individual person possesses anywhere from very low to very high levels of neuroticism. The low end of this trait is also called *emotional stability*; high neuroticism is low emotional stability and low neuroticism is high emotional stability.

The person who is extremely high in neuroticism is not only fearful, depressed, and angry but also moody, nervous, high strung, temperamental, and insecure. An individual who is low in neuroticism (high in emotional stability) is not necessarily high in positive emotions such as happiness but experiences low levels of negative emotions. This individual could be described as stable, secure, self-assured, relaxed, and contented.

Ozer and Benet-Martínez (2006) discuss several traits, including neuroticism, and how they are related to individual outcomes, interpersonal outcomes, and institutional outcomes. Not surprisingly, high neuroticism is generally associated with negative outcomes in each of these arenas. For example, those high in neuroticism have higher rates of physical symptoms, psychiatric illness, stress, and loneliness and lower satisfaction with both interpersonal relationships and work life.

Some researchers have hypothesized that neuroticism may have a biological basis. The British psychologist Hans Eysenck proposed that neuroticism may be associated with activity of the limbic system, a set of structures in the brain theoretically involved in the experience and regulation of emotion. His and other genetic theories

have failed to find much support. However, one brain structure, the amygdala, is implicated in the experience of a specific emotion: fear. LeDoux (1996) argues that when danger is perceived, the amygdala activates different responses (endocrine, autonomic, behavioral) to contend with the danger. Nonetheless, a direct connection between the amygdala and the trait neuroticism, should it exist, has not yet been demonstrated.

Positive emotional traits that have been studied frequently are happiness and extraversion, which includes positive emotion as a component. Happiness can be described as both a temporary experience and an affective tendency; utilizing this second meaning, happiness is a personality trait. Research on happiness and related variables supports the idea that happiness can exist as a personality trait. Life satisfaction tends to be stable over time in people; people's current level of happiness tends to be a fairly predictive of how happy they will be in the future (Watson, 2002). Additionally, in two studies that researched thousands of pairs of twins, identical twins (monzygotic, sharing 100% of their genes) were more similar in life satisfaction than fraternal twins (dizygotic, no more genetically similar than regular siblings) in both young adulthood and middle adulthood (Lykken & Tellegen, 1996; Roysamb, Harris, Magnus, Vitterso, & Tambs, 2002). These twin study findings have been used to suggest that life satisfaction (tendency toward happiness) may have a genetic component; however, more research is needed to more fully support this conclusion.

Extraversion is a collection of attributes that includes positive emotion, sociability, activity and assertiveness, excitement seeking, and sometimes impulsiveness. Extraversion is a trait continuum such that each individual possesses anywhere from very low amounts of extraversion (which is called *introversion*) to very high amounts (called *extraversion*). Most people actually fall somewhere in the middle of the continuum, and neither label—extravert nor introvert—describes these persons very well. These individuals are called *ambiverts*.

The person who is extremely high in extraversion frequently experiences positive emotion, and life satisfaction over the long term correlates moderately with extraversion (Costa & McCrae, 1980). Some researchers (e.g., Watson & Clark, 1997) argue that the positive emotion causes many of the other subtraits of extraversion; it is the extravert's happiness, joy, and excitement that leads to sociability, activity, assertiveness, and other qualities. In conjunction with the positive emotion, extraverts have more positive experiences than people who are not extraverts. For example, compared to introverts, extraverts are healthier, long-lived, successful in relationships, satisfied in their jobs, and likely to be leaders (Ozer & Benet-Martínez, 2006). Perhaps counterintuitive, extraversion has nothing to do with negative emotion. Although extraverts experience more positive emotion than introverts and ambiverts, they do not experience any more or less negative emotion. Therefore an extravert could experience low, moderate, or high amounts of negative emotion compared to other people.

Some researchers have hypothesized that extraversion may have a biological basis. For example, Hans Eysenck proposed that the trait continuum extraversion-introversion is related to activity of a brain structure, the reticular activating system, a set of nerve fibers extending from the spinal cord into the interior of the brain. The reticular activating system is responsible for physiological arousal. Eysenck's

hypothesis was that extraverts' brain activity in this area is low whereas introverts' activity is high. Because of the low activation in the brain, Eysenck argued, extraverts seek stimulation from the outside world. Conversely, introverts are overaroused and thus choose to withdraw from stimulation. In general, research has not supported this idea that brain activity associated with general arousal is any different in extraverts or introverts. More recent theories center on a chemical messenger in the brain that is implicated in pleasure and reward called *dopamine*. Results of one study indicated that in a specific laboratory situation, dopamine was more active in extraverts' than in introverts' brains (Depue, Luciana, Arbisi, Collins, & Leon, 1994). If a reliable relationship exists between extraversion and dopamine, it is likely complex, and research in this area is ongoing.

See also amygdala, extraversion, happiness, introversion, neuroticism, PEN model of personality, personality.

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Aggression

Aggression is behavior that is intended to harm another individual. The harm may be either physical, such as a punch or a kick, or verbal, such as an insult. Social psychologists have long recognized two types of aggression: instrumental and emotional. Instrumental aggression occurs when an individual intends to harm someone to obtain a desired end. In this form, the act of harm may be regarded as the only way to achieve one's goals. For instance, soldiers during war would likely explain their attack on the opposing forces in terms of instrumental aggression. Emotional aggression, on the other hand, is behavior accompanied by both the means and the end and is often impulsive. The purpose of aggression in this case is solely to hurt. Hitting someone in a rage is an example of emotional aggression.

Certain neural systems within the brain are possible factors in aggression. Studies have found that stimulating the hypothalamus (Ferris et al., 1997) or the amgydala in hamsters (Potegal, Hebert, DeCoster, & Meyerhoff, 1996) increases aggressive behavior. LeDoux (1986) has pointed out that the amygdala contributes to aggression by activating the fight-or-flight response, a physiological and psychological response associated with stress that involves preparing the body either to fight or to flee. Other brain areas that have been implicated in aggression include the hippocampus, prefrontal cortex, and septal nuclei.

Evidence consistently points to certain hormones and neurotransmitters (chemical messengers in the brain) as being involved in aggression. Studies have shown associations between aggression and the neurotransmitter (chemical messenger) serotonin as well as the hormone testosterone, especially in males (see Nelson, 2005). Randy Nelson's (2005) book *Biology of Aggression* reviews the evidence on these chemicals, other hormones and neurotransmitters, genetics, and other biological aspects of aggression.

Evolutionary psychologists suggest that human aggression results from an innate motivation to protect the survival of their genes. The inhibited aggression against genetically related others (to the extent that that occurs) can be accounted for by this explanation. From this point of view, there are sex differences in aggression. Males would be expected to aggress to achieve and maintain social status, while females would aggress to protect offspring.

Aggression seems to be affected by learning. According to social learning theory, aggressive behavior is learned through the observation of others. Bandura, Ross, and Ross's (1961) inflatable doll study showed that children who had previously observed an adult aggressing toward an inflatable doll were later more aggressive toward the doll than children who had watched an adult sitting quietly. The general results from this study have been replicated reliably. This line of research inspired studies about whether and how media violence may lead to aggressive behavior in young people. See Aronson, Wilson, and Akert (2006), who argue that media violence causes likely aggression, and Freedman (2002), for an opposing position.

Other topics in aggression include the influence of culture on aggression, social factors (other than social learning or culture) that affect aggression, personality and aggression, aggression in nonhuman animals, and war. The interest in aggression remains steady in both the social and biological sciences.

See also amygdala, anger, hormones.

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Mary D. Salter Ainsworth (1913–1999)

Mary Ainsworth was an American developmental psychologist best known for research on infant-caregiver attachment, in particular, individual differences in attachment styles. Mary Ainsworth was born in December 1913 in Glendale, Ohio. Her father, who had a master's degree in history, worked for a manufacturing firm in Cincinnati, and her mother was primarily a homemaker. Ainsworth had two sisters, with whom she was close. When Ainsworth was five, her father's company transferred him to Toronto, Canada, and the family moved to Toronto.

Ainsworth went to college at the University of Toronto, earning a bachelor's degree in psychology in 1935. She entered graduate school there, earning both master's (1936) and doctoral (1939) degrees in psychology. She taught at the University of Toronto for a few years, then joined the Canadian Women's Army Corps in 1942. After World War II, she returned to the University of Toronto to teach and conduct research and met Leonard Ainsworth, whom she married in 1950. They moved to London, where he completed a graduate degree at University College. While in London, Mary worked with other researchers, in particular the famous attachment theorist John Bowlby, at the Tavistock Clinic, studying how separation from the mother affects a child's emotional development. In 1954, Ainsworth went to Africa and began her longitudinal research on infant-caregiver interactions. Her husband was also able to move to Africa, accepting a job at the East African Institute of Social Research in Uganda. In 1956, they moved back to the United States, both accepting positions in Baltimore. The couple divorced in 1960; the experience was very painful for Mary.

The 1950s and 1960s in London, Uganda, and Baltimore were productive years for Ainsworth. During that time Ainsworth and her colleagues developed the *strange situation method* for studying infant-caregiver attachment. In this method, Ainsworth and colleagues brought mother and infant into a laboratory playroom filled with toys. A researcher would greet both then move to a corner of the room to sit quietly. Under this circumstance, most babies crawl off to play with the toys. Next, the test would begin. The mother would leave, and the baby was left alone with the stranger. Ainsworth was interested in how the baby would react to the mother leaving and also how the baby would behave when the mother returned. Ainsworth identified three basic attachment patterns. In *anxious-ambivalent* attachment, the infant is very upset when mother leaves. When the mother returns, the infant tends to behave in an ambivalent fashion, demonstrating both love and anger (e.g., clinging to mother and lightly hitting her with fists). The infant whose attachment is *avoidant* does not appear distressed when mother leaves. When mother returns, the infant generally ignores her. In the [illegible] type of attachment, *secure*, the infant responds with some distress wh[illegible] leaves, but [illegible] less distress than the anxious-ambivalent infant dem[illegible]ates. [illegible] returns.

the infant greets her happily and all returns to normal. Attachment remains a popular topic of study. Research that followed Ainsworth's has focused on a variety of topics. One area of interest has been adult relationship patterns that are associated with the infant attachment patterns. For example, research has tended to indicate that the securely attached infant is secure in adult romantic relationships. In contrast, individuals with either insecure attachment pattern as an infant (anxious-ambivalent or avoidant) tend to have less secure and stable adult relationships. Another area of research has been to explore the reasons why some infants demonstrate the attachment patterns that they have. For example, Ainsworth, Blehar, Waters, and Wall (1978) found that the mother's sensitivity to her baby's cues is related to the baby's attachment pattern.

Ainsworth's most long-lasting academic position was with the University of Virginia, where she was hired in 1974 and remained for the rest of her career. She retired in 1984 and continued on as professor emeritus until her death. She received many awards, including the American Psychological Association Distinguished Scientific Contribution Award, the American Psychological Foundation Gold Medal for Scientific Contribution, and others. She published a large number of articles and books. Ainsworth died in 1999 at age 86.

See also attachment, John Bowlby, Harry Harlow.

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Al-Anon and Alateen

When Alcoholics Anonymous (AA) began in 1935, family members also attended AA meetings. Lois (the wife of AA cofounder Bill Wilson) and her friend Anne B. established Al-Anon Family Groups in 1951 as meetings separate from AA meetings so family members and friends of alcoholics could help each other recover from the effects of the alcoholics' drinking.

Al-Anon members (and Alateen for young family members) focus on their own recoveries, not on the alcoholic. Members of Al-Anon and Alateen learn about the disease of alcoholism, and they also learn that they cannot control the alcoholic. Alcoholism is a family illness; family members and friends in the alcoholic's life often spend a great deal of time and energy trying to "fix" the alcoholic, control the alcoholic's drinking, make excuses, cover up, punish, or take responsibility for the alcoholic's behavior. Taking responsibility for the alcoholic actually enables the alcoholic to keep drinking. The codependent behavior as well as the behavior of the alcoholic results in a dynamic that hurts the whole family. When family members

and friends focus on their own recovery, they are able to improve their lives and thus improve the problem drinker's chances for recovery. Al-Anon is based on the 12 Steps of AA and provides free, confidential, nonprofessional support to people in need.

Based on a 2003 voluntary membership survey, there are over 26,000 Al-Anon and Alateen groups worldwide. The average member has participated in Al-Anon for 10.3 years and in Alateen for 2.5 years. The average age of Al-Anon members is 51 years, while Alateen members average 14 years of age. Al-Anon membership is 88 percent female, and 57 percent of members are married; 62 percent of Alateen members are female.

Other 12-step programs established to help support the family and friends of people with addictive or disordered behaviors include Nar-Anon (for families of addicts, 1968), Adult Children of Alcoholics (ACoA, established in 1978), Co-Dependents Anonymous (CoDA, 1986), and Families Anonymous (FA).

See also Alcoholics Anonymous, 12-step programs.

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Alcohol Abuse and Alcoholism

In the United States, the most frequently abused of all drugs is alcohol. For example, 23 percent of people in the United States over age 11 binge drink every month (National Survey on Drug Use and Health [NSDUH], 2008). *Binge drinking* is defined as consuming five or more drinks on a single occasion. Worldwide, 6.6 percent of people display behaviors characteristic of alcohol abuse or dependence (Somers, Goldner, Waraich, & Hsu, 2004). The personal and social impacts of alcohol abuse and dependence are huge. Drunk drivers cause the death of 12,000 people in the United States each year (NSDUH, 2008). Alcohol abuse or dependence likely plays a part in about one-third or more of all homicides, suicides, and accidental deaths and a large number of assaults in the United States (Ksir, Hart, & Oakley, 2008). Heavy drinking can greatly impact physical health over time, causing damage to the liver, heart, brain, and other organs. Pregnant women who drink put the unborn child at risk for fetal alcohol syndrome, which is associated with mental retardation, hyperactivity, heart damage, retarded physical growth, and facial deformities.

Alcohol abuse and alcohol dependence are related but distinct concepts, and both qualify as substance (drug use) disorders in the United States. In the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), the official manual used in the United States to diagnose mental disorders, specific criteria are listed for substance (drug) abuse, which includes alcohol abuse. There is a maladaptive pattern of substance use that results in considerable impairment or distress, as revealed by one or more of the following, manifesting within a 12-month time frame: (1) repeated substance use leading to [illegible] in

performing important role obligations at work, school, or home (e.g., failure to show up at work or school or neglecting one's children); (2) recurrent substance use in contexts in which the use causes physical hazards (e.g., substance use while driving); (3) repeated legal problems due to the substance use (e.g., arrests for disturbing the peace); and (4) persistent substance use despite awareness of social or interpersonal problems associated with the substance use (e.g., arguments with a domestic partner about the substance use).

Substance (including alcohol) abuse does not imply substance dependence, although dependence does imply abuse. The *DSM-IV-TR* identifies substance dependence. A maladaptive pattern of substance use must exist, leading to considerable impairment or distress, with at least three of the following symptoms present: (1) tolerance for the substance, as indicated by a need for greater amounts of the substance to produce the desired psychological state or notably decreased effect as one continues to use the same amount of the substance; (2) withdrawal symptoms; (3) use of larger amounts of the substance, or over a longer period, than planned; (4) consistently desire or unsuccessful attempts to decrease or control the substance use; (5) large amounts of time spent attempting to obtain the substance, use the substance, or recuperate from the effects of the substance use; (6) significant social, occupational, or recreational activities are decreased or abandoned because of use of the substance; and (7) substance use is continued despite awareness of physical or psychological problems associated with the use.

There is likely more than one cause of alcohol abuse or dependence. According to the sociocultural viewpoint, alcohol and other substance abuse is related to socioeconomic stress and to cultural values and customs. Some evidence supports these assertions. For instance, people from lower socioeconomic classes abuse alcohol at a higher rate than people with higher socioeconomic status (e.g., Franklin & Markarian, 2005). Rates of alcoholism are relatively high among Irish and Eastern Europeans, who are typically more accepting of alcohol use and fail to communicate a clear limit to substance use than people from other cultural backgrounds (e.g., Ksir et al., 2008; Ledoux, Miller, Choquet, & Plant, 2002). Behavioral and cognitive factors may also contribute to alcohol and other substance abuse and dependence. Behaviorists argue that use of a drug is rewarding, through producing both pleasurable feelings and a reduction of tense feelings (e.g., Ksir et al., 2008). Cognitive theorists further reason that the *anticipation* that use of a drug will lead to these pleasurable effects further encourages substance use (Chassin, Collins, Ritter, & Shirley, 2001). Some evidence has supported these behavioral and cognitive perspectives. For instance, it is true that people are more likely to seek out substances such as alcohol or heroin when they feel stress (e.g., Cooper, 1994).

Both genetic and biological factors probably contribute to alcohol and other substance abuse and dependence. Studies on children who are adopted shortly after birth support a genetic contribution. In these studies, children whose biological parents suffered from alcohol dependence were compared to children whose biological parents had no alcohol dependence. By the time the children reached adulthood, those with alcohol-dependent biological parents had higher rates of alcohol abuse (e.g., Walters, 2002). Drugs also operate on chemical messengers in the brain, called *neurotransmitters*, which have varying functions, including lifting mood, reducing pain, and increasing alertness. The effect drugs have on these

neurotransmitters can partially explain why using drugs is often experienced as pleasurable and why people would seek drugs to achieve these psychological effects.

Alcohol abuse and dependence are treated through a variety of modalities. Some treatments work at the biological level, such as detoxification, which is withdrawal from a drug, such as alcohol, while under medical supervision. Treatment may also operate at the behavioral level. For instance, aversion therapy involves associating the drug with something highly unpleasant. When treating alcohol addiction, alcohol may be paired with a drug that produces nausea and vomiting. The natural aversion for nausea and vomiting may lead to an aversion for alcohol. Self-help groups, such as Alcoholics Anonymous, and residential treatment programs are also used to treat abuse and dependence. A variety of authors in Francis, Miller, and Mack's (2008) edited volume describe these treatments and others. As discussed in these chapters, treatments require hard work on the part of the addicted individual and are most often moderately successful rather than highly successful. It is important to fully understand alcohol abuse and addiction to further alleviate the suffering and cost associated with this common form of substance abuse and addiction.

See also Al-Anon and Alateen, Alcoholics Anonymous, aversion conditioning (aversion therapy), detoxification, *Diagnostic and Statistical Manual of Mental Disorders*, genetics, NAADAC (The Association for Addiction Professionals), National Institute on Alcohol Abuse and Alcoholism, National Institute on Drug Abuse, neurotransmitter, substance abuse, Substance Abuse and Mental Health Services Administration.

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Alcohol abuse in the workplace:

- Most heavy alcohol users and binge drinkers are employed; 79.4 percent of adult binge drinkers and 79.2 percent of adult heavy drinkers are employed (either full- or part-time).
- Hangovers are responsible for much loss of workplace productivity.
- More than 7 percent of American workers drink during the workday (mostly at lunch), and over 9 percent say they have nursed a hangover in the workplace.
- Over 17 percent of military personnel who responded to a 2002 survey reported alcohol-related loss of work productivity.
- A 2005 study revealed that workers in the wholesale, retail, and construction and mining industries are 25 to 45 percent more likely to have serious alcohol problems than U.S. workers in other industries.
- A 2006 study estimated that alcohol use and impairment in the workplace affects about 15 percent of U.S. workers (approximately 19.2 million Americans).

Source: http://www.workplace.samhsa.gov/WPWorkit/pdf/workplace_substance_abuse_statistics_fs.pdf

Alcoholics Anonymous

Alcoholics Anonymous (AA), founded in 1935, was the first 12-step program. Bill Wilson, a New York stockbroker, and Dr. Bob Smith, an Ohio surgeon, developed the 12 Steps of AA as a way to help each other, and others who suffered from the disease of alcoholism, to stay sober.

AA was based on the principles of the Oxford Group, a Christian fellowship established in England in 1908 by Frank Buchman. Bill Wilson was able to get sober by practicing the Oxford Group precepts and found that helping other alcoholics to stop drinking helped him to remain sober. However, none of the alcoholics with whom Bill worked remained sober. Dr. Bob Smith was unable to remain sober through his Oxford Group membership. AA's founders were able to maintain their sobriety by working together and helping other alcoholics. Together they developed

a program of 12 Steps, based on the Oxford Group principles but with a focus on spirituality rather than religion. AA is not allied with any religious sect or denomination. The AA program revolves around meetings, sponsorship, working the 12 Steps, and doing service in AA.

In the 12 Steps of AA, the first step is admitting that there is a problem: that one is powerless over alcohol (or another addiction). The second and third steps are spiritual in nature: believing that a higher power (of one's own understanding) can help relieve one's problems (i.e., alcoholism or other addiction) and deciding to turn one's life over to the care of that higher power. In the fourth and fifth steps, one creates and shares a list of one's behaviors with another person. Then in the sixth and seventh steps, one identifies what personal characteristics (referred to as shortcomings) have contributed to the behaviors recounted in the fifth step inventory and asks one's higher power to remove those shortcomings. The eighth and ninth steps involve making amends (e.g., apologies and reparations) to people one has harmed. The 10th step is a maintenance step, involving examining one's behaviors and making any necessary amends on a daily basis. The 11th step involves maintaining contact with one's higher power through daily meditation and prayer. The 12th step involves giving back to others recovering from alcoholism through service (e.g., sponsoring others, sharing the AA message, or doing service in AA groups).

During its first decade, AA members and groups realized that certain attitudes and principles were important to ensure the survival of the fellowship. AA developed 12 Traditions that exemplified these principles, and the membership as a whole endorsed the 12 Traditions in 1950. These traditions include principles such as group autonomy, group self-support through member contributions, nonaffiliation with entities outside AA, member anonymity at a public level, and not endorsing positions about issues outside AA. The 12 Traditions ensure that no one is excluded from AA membership because of his circumstances. There are no dues or fees for AA membership, and the only requirement for AA membership is a desire to stop drinking.

From its modest beginnings, the number of autonomous AA meetings grew, first in the United States and later around the world. It is currently estimated that there are over 100,000 AA groups with over two million members in 150 countries. AA members are men and women from all walks of life. Every three years, AA performs an anonymous, voluntary survey of its members to collect some general demographic information about its membership. Over 7,500 AA members from the United States and Canada responded to the 2004 random membership survey. Survey results indicated that the average AA member is 48 years old, has been sober over 8 years, and attends about two meetings weekly. Women comprise 35 percent of AA members.

Early in its history, AA members realized how alcoholism adversely affected their families. *Codependency* is the term now used to describe the family dynamics that enable the alcoholic to keep drinking, shield the alcoholic from adverse consequences, and keep the whole family sick. In 1951, Al-Anon Family Groups was founded to support family members and friends of alcoholics. Adults attend Al-Anon meetings, while young relatives and friends of alcoholics attend Alateen meetings. The 12 Steps of Al-Anon and Alateen are based on AA's 12 Steps. Members of Al-Anon

and Alateen are encouraged to focus on their own recovery rather than focusing on the alcoholic. Other 12-step programs focused on recovery from codependency include Nar-Anon (1968), Adult Children of Alcoholics (ACoA, established in 1978), Co-Dependents Anonymous (CoDA, 1986), and Families Anonymous (FA).

See also Al-Anon and Alateen, alcohol abuse and alcoholism, 12-step programs.

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Alcoholics Anonymous (AA) estimates more than two million members and over 114,000 groups in the United States, Canada, and other countries. Women make up about 35 percent of total AA membership (Alcoholics Anonymous World Services Inc., 2007).

Alexithymia

Alexithymia comes from the Greek roots *a* (lack or without), *lexus* (word), and *thymos* (mood or emotion). It literally means "without words for emotions." Though it was originally thought to be linked to psychosomatic disease, it is currently viewed as a personality characteristic, cognitive language style, deficit in processing emotional information, or deficit in affect regulation (Zech, Luminet, Rimé, & Wagner, 1999). In 1963, French psychoanalysts M'Uzan and Marty used the term *pensée d'opératoire* to describe the manner in which psychosomatic patients generally reported on events and their own actions without utilizing emotional descriptions (Zech et al., 1999). In 1973, psychiatrist Peter Sifneos (1920–2008) coined the term *alexithymia*. Sifneos was born on the Greek island of Lesbos, educated in Paris, and later taught at Harvard Medical School. Sifneos noted that characteristics of individuals with alexithymia included difficulty recognizing and describing emotions, difficulty distinguishing between emotions and bodily sensations, little imagination and few fantasies, and preferring to focus on external events (rather than internal experience; Zech et al., 1999). Research has been conducted looking at alexithymia as an aspect of personality as it relates to emotional awareness and to emotional intelligence. Instruments used to measure alexithymia include the self-report questionnaires the Observer Alexithymia Scale (OAS; Haviland, Warren, & Riggs, 2000), Toronto Alexithymia Scale (TAS-20), and Bermond-Vorst Alexithymia Questionnaire (BVAQ). Many other self-rating questionnaires are available (e.g., on the Internet); however, they may lack reliability and validity (Zech et al., 1999).

Alexithymia has been associated with schizophrenia, aphasia (loss of ability to speak or understand speech), brain injury, Parkinson's disease, insecure attachment,

psychosomatic disease, stress-related illnesses, depression, posttraumatic stress disorder, dysphoria (feeling unwell or unhappy), substance abuse, eating disorders, panic disorder, and severe trauma. Mild to moderate alexithymia has been posited to be a by-product of normal male role socialization, wherein boys grow up unaware of their emotions (Levant, 2004). There is some overlap between alexithymia and Asperger's syndrome (an autistic spectrum disorder; Fitzgerald & Bellgrove, 2006). TenHouten, Hoppe, Bogen, and Walter (1986) performed research with individuals in whom connections between the left and right hemispheres of the brain were severed (cerebral commisurectomy). Connections between hemispheres were completely severed in some individuals, partially severed in others, and not severed at all in control subjects. Individuals with fewer working connections between right and left brain hemispheres demonstrated greater degrees of alexithymia (TenHouten et al., 1986). TenHouten and colleagues hypothesized that because of the tendency of the right hemisphere (in right-handed adults) to be involved in cognitive representations of emotions and the left hemisphere in verbal expression, lack of communication between right and left hemispheres of the brain contributed to alexithymia. Brain structures implicated in alexithymia include the right and left hemisphere, corpus callosum, anterior commissure, anterior cingulate, prefrontal cortex, amygdala, and insular cortex (insula; Bermond, Vorst, & Moormann, 2006). The corpus callosum and anterior commissure are involved in facilitating communication between right and left brain hemispheres. Because of difficulty identifying and describing emotions, traditional insight-oriented psychotherapy is typically not an effective treatment for alexithymia. More effective treatments for alexithymia include cognitive-behavioral, psychoeducational, skills training, family systems, and group therapies (Levant, 2004).

See also amygdala, anterior cingulate cortex, autistic spectrum disorders, cognitive therapy and cognitive-behavioral therapy, depression, dysphoria, emotional intelligence, family therapy, group therapy, insula, panic disorder, Parkinson's disease, posttraumatic stress disorder, prefrontal cortex, schizophrenia, traumatic brain injury.

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- In studies of the general population, the degree of alexithymia was found to be influenced by age but not by gender; several studies have reported that the prevalence rate of alexithymia is less than 10 percent in healthy controls (Fukunishi, Berger, Wogan, & Kuboki, 1999).
- A less common finding suggests that there may be a higher prevalence of alexithymia among men than women. This may be accounted for by difficulties men have describing feelings but not difficulties in identifying feelings, in which men and women show similar abilities (Salminen, Saarijärvi, Aärelä, Toikka, & Kauhanen, 1999).

Alienation

Alienation refers to an individual's psychological isolation (estrangement) from society and from other people in general. The term is also used to describe the feelings that occur along with being estranged. Alienation is typically experienced as unpleasant, but in extreme cases, such as under the condition that alienation persists over time, an individual's emotional reaction to being alienated may be apathy or indifference.

Existential philosophers Kierkegaard and Heidegger spoke of emotions that humans experienced when faced with existential problems such as freedom of choice or the question of the meaning of existence. A common emotional reaction is angst—generalized anxiety and turmoil. As a part of feeling angst, an individual experiences alienation, a feeling of being separated and isolated from others and even, according to Heidegger, from the universe.

The 19th-century German philosopher and social theorist Karl Marx used the term *alienation* in several related ways and wrote that alienation occurred as a result of capitalism. In capitalist societies, individuals do not own their own labor. Individuals produce labor that becomes the property of the capitalists. Although individuals' labor may benefit the whole though contributing to collective wealth, the individual has little control over her labor. She is a cog in the machine, an object, an instrument, and has little opportunity to become a self-made, actualized, fulfilled human being. This circumstance leads to several types of alienation (Marx, 2007). The individual becomes alienated from (1) her essence as a human being—she is more like a machine serving a purpose; (2) other workers because labor is a

commodity to be traded and social relationships are deemphasized; (3) the product because the worker works on an aspect of the product and does not have an intimate connection to the whole product; and (4) the act of production because the work itself becomes meaningless, perceived as having no intrinsic value.

See also angst, anomie.

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Altered States of Consciousness

An altered state of consciousness is any state of consciousness (state of awareness or state of mind) that differs significantly from a typical waking state. As American psychologist and parapsychologist and world-renowned altered-state expert Charles Tart (2001) describes, the different "discrete" forms of consciousness (e.g., normal state, drug-induced state, meditative state) each involve the functioning and experiencing of the person as a whole; they do not merely involve only one aspect of functioning or experiencing. Each of these discrete states of consciousness is distinctly different from the others and forms a gestalt, an emergent property; the characteristics that comprise each state fit together or "hang together," and the individual is clearly "in" or experiencing that particular state physiologically, cognitively, emotionally, and so forth. Tart (2001) discusses the nature of consciousness at length and claims that scholars are in the early stages of understanding the complex nature of this phenomenon.

Ludwig (1990) describes a number of general characteristics of altered states of consciousness. These are alterations in thinking, disturbed time sense, an experience of loss of control, change in emotional expression, body image change, perceptual distortions, change in meaning or significance (such as an ah-ha experience or feeling of novel and profound insight), sense of the ineffable, feelings of rejuvenation, and hypersuggestibility.

Many altered states of consciousness can be created intentionally. Common purposely induced altered states are psychoactive drug experiences, such as through use of alcohol, cannabis, opiates, hallucinogenic drugs, or others or through meditation and meditative practices, including yoga, which may be pursued for relaxation, spiritual, or other purposes, and hypnosis. Altered states may also come about accidentally through fever, starvation, sleep deprivation, deep diving, head trauma, and in other ways.

Charles Tart discusses consciousness and altered states of consciousness in his scholarly books *States of Consciousness* (1979/2001) and *Altered States of Consciousness* (1990). Ronald Havens's (2007) book *Self Hypnosis for Cosmic Consciousness* describes how regular practice of self-hypnosis can be used to achieve greater self-awareness and inner peace.

See also hypnotherapy.

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Ambivalence

To be ambivalent is to feel conflicting emotions toward a person or thing; ambivalence involves feeling both positive and negative emotions. For instance, an individual may experience ambivalent feelings about her divorce, her unexpected pregnancy, moving across the country to start the job she always wanted, or the death of her dearly loved elderly father who was in great pain at the end of his life.

Ambivalence is generally experienced as unpleasant when the mixed feelings are perceived at the same moment in time. Ambivalence can lead to unproductive reactions such as avoidance, procrastination, or denial of responsibility. However, if no decision is required in the ambivalent situation, the unpleasantness is lessened (Van Harreveld & van der Pligt, 2009).

Ambivalence is a relatively complicated emotional state, and recognition of this experience develops at a later age than recognition of many other emotional states. Harter and Buddin (1987) showed that children do not fully understand that they or others can feel opposing emotions at the same time until about age 10 or 11.

From a psychoanalytic perspective, ambivalence usually refers to feeling both love and hatred for the same person. Freud (e.g., Freud, 1917/1953, 1923/1953) proposed that ambivalence is typical in love relationships, and the more intense the love, the more passionate is the hatred. From this viewpoint, most often, rather than experiencing both emotions at the same time, one emotion is experienced consciously (e.g., love) while the opposite emotion (hatred, in this case) is repressed.

See also cognitive dissonance, psychoanalytic perspective.

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American Association for Marriage and Family Therapy

Founded in 1942, the American Association for Marriage and Family Therapy (AAMFT) is a professional organization for the field of marriage and family therapy. According to the Association's Web site, AAMFT represents "the professional interests of more than 24,000 marriage and family therapists throughout the United States, Canada and abroad. . . . The AAMFT has been involved with the problems, needs and changing patterns of couples and family relationships. The association leads the way to increasing understanding, research and education in the field of marriage and family therapy, and ensuring that the public's needs are met by trained practitioners." AAMFT develops standards for graduate education and training, clinical supervision, professional ethics, and the clinical practice of marriage and family therapy. AAMFT provides members with the tools and resources they need to succeed as marriage and family therapists (MFTs). AAMFT members meet rigorous standards for education and training and are held to the highest ethical standards of the profession.

According to the AAMFT Web site, family behavior patterns influence the individual. Marriage and family therapy is an intervention aimed at ameliorating relationship problems and mental and emotional disorders within the context of family and larger social systems. Marriage and family therapy is brief, focused on solutions, specific, and has attainable therapeutic goals. MFTs are mental health professionals trained in psychotherapy and family systems and licensed to diagnose and treat mental and emotional disorders within the context of marriage, couples, and family systems. They treat a wide range of clinical problems, including depression, marital problems, anxiety, individual psychological problems, and child-parent problems. MFTs take a holistic perspective to health care; they are concerned with the overall, long-term well-being of individuals and families.

AAMFT's position is that all committed couples and their children have a right to expect equal support and benefits in a civil society. The AAMFT code of ethics prohibits discrimination on the basis of race, age, ethnicity, socioeconomic status, disability, gender, health status, religion, national origin, or sexual orientation. AAMFT supports public policy initiatives that strengthen marriages, civil unions, and families.

AAMFT hosts an annual national training conference and periodic continuing education to allow practitioners to exchange important information. They publish a scholarly research journal (*Journal of Marital and Family Therapy*), news about the field (*Family Therapy Magazine*), and a variety of brochures and pamphlets to inform the public about the field of marriage and family therapy.

See also family therapy.

Further Reading:

American Association for Marriage and Family Therapy Web site: http://www.aamft.org/

American Psychiatric Association

The American Psychiatric Association is a professional organization representing medical specialists who are qualified as psychiatrists. [illegible]ee psychiatrists. Recognized worldwide, the association holds over 38,0[illegible]S. and internati[illegible]ember

physicians. To be eligible as a member of the American Psychiatric Association, a candidate needs to complete a residency program in psychiatry. The residency program must be accredited by the Residency Review Committee for Psychiatry of the Accreditation Council for Graduate Medical Education, the Royal College of Physicians and Surgeons of Canada, or the American Osteopathic Association. A valid medical license is generally required for applicants. In addition, applicants must present one reference from an existing member of the association.

The American Psychiatric Association attempts to ensure that effective care and treatment are provided to all individuals suffering from mental disorders. The association also focuses on promoting psychiatric education and research to fulfill the needs of medical specialists. The organizational purpose of the association is to contribute to the development of a society in which people have easy access to quality psychiatric diagnosis and high-quality care.

The *Diagnostic and Statistical Manual of Mental Disorders*, or *DSM*, which describes psychiatric conditions for the purpose of diagnosis, is published by the American Psychiatric Association. Information on a patient that is derived from a *DSM* interview is the primary information used to make psychiatric diagnoses in the United States. The association also publishes various journals and pamphlets. Through an annual conference attended by a U.S. and international audience, the American Psychiatric Association plays the role of information disseminator.

The association was originally founded in 1844 in Philadelphia at a meeting of 13 superintendents and organizers of insane asylums and hospitals. Its initial name was Association of Medical Superintendents of American Institutions for the Insane. The name was changed to the present American Psychiatric Association in 1921. APA has been involved in several controversies since its founding. For instance, for a number of years, the American Psychiatric Association identified homosexuality as a psychiatric disorder and later withdrew homosexuality from the list of disorders. As another example, since psychiatrists frequently prescribe medications as treatments for psychiatric disorders, the American Psychiatric Association has been criticized for promoting medication treatment when it is not always necessary, and members have been accused of prescribing medications for personal gain. In his popular-press book *Comfortably Numb: How Psychiatry Medicated a Nation*, Charles Barber (2009) presents such an argument.

See also Diagnostic and Statistical Manual of Mental Disorders.

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American Psychological Association

Founded in 1892 in Worcester, Massachusetts, the American Psychological Association (APA) is one of the [illegible] leading professional and scientific organizations of psychology in the Un[illegible]ate[illegible] the APA had about 148,000

members and was the world's largest psychological association. The association's membership consists of academicians, scientists, and practitioners such as therapists and school psychologists. The APA's headquarters are based in Washington, D.C.

The APA is devoted to advancing and applying psychological knowledge to promote human welfare. The APA plays an important role as a dissemination channel of knowledge and helps define the field of psychology through annual conventions and publications. The annual APA meeting facilitates the exchange of the latest research in a setting where academics, scientists, and practitioners all come together. Before the meeting, abstracts of papers are published in the *Psychological Bulletin.*

The official journal of the APA is *American Psychologist*, which publishes articles on current topics, psychology's contribution to public policy, the science of psychology, and the practice of psychology. The APA publishes 59 additional journals, covering most major subfields and topics in psychology, including *Behavioral Neuroscience*, *Developmental Psychology*, *Emotion*, *History of Psychology*, *Journal of Clinical and Counseling Psychology*, *Journal of Experimental Psychology*, *Journal of Personality and Social Psychology*, *Psychological Methods*, *Psychology of Men and Masculinity*, *Psychology of Religion and Spirituality*, and *Psychotherapy Theory, Research, Practice, and Training*. The APA also publishes books, regular magazines, and newsletters for members as well as other publications.

The APA maintains PsycINFO, the premier systematic database of psychological literature in the world. PsycINFO holds over two million records of publications, ranging from some dated in the 1800s to the present time. PsycINFO catalogs journal articles, book chapters, books, technical reports, and dissertations. The APA has established an editing style called APA style, which is used for all publications by the APA and which has been adopted in other fields, particularly in the social and behavioral sciences. APA style is one of three commonly used editing styles in scholarly writing; the other two are the Chicago and Modern Languages Association styles. Other significant activities of APA include providing press releases about psychological research to the media, providing continuing education for professional psychologists, and serving as a resource for individuals who desire referrals to psychological services such as counseling.

In 2009, the American Psychological Association had 54 professional divisions that signify diversified interests of psychologists. Examples of divisions include the Society for the Teaching of Psychology, Experimental Psychology, Developmental Psychology, Society for the Psychological Study of Social Issues, Society of Clinical Psychology, Educational Psychology, Society for Military Psychology, Society for Consumer Psychology, Society for the Psychology of Women, Health Psychology, Society for the Psychological Study of Ethnic Minority Issues, and Exercise and Sport Psychology. Members of the APA may choose to become members of any, all, or none of the divisions. The APA also includes state and provincial associations within its organization. Members of the divisions may be either researchers or practitioners, whereas members of the state and provincial associations are primarily practitioners. Together the divisions and state associations are important forces in the APA.

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American Society of Group Psychotherapy and Psychodrama

The American Society of Group Psychotherapy and Psychodrama (ASGPP) was founded in 1942 by Jacob L. Moreno, a Viennese psychiatrist who is best known for his development of psychodrama. ASGPP is a source for ongoing development in the areas of psychodrama, sociometry, and group psychotherapy. According to the society's Web site, the ASGPP's mission is

1. to foster the national and international cooperation among all who are concerned with the theory and practice of psychodrama, sociometry, and group psychotherapy
2. to encourage and promote professional training in psychodrama, sociometry, and group psychotherapy
3. to promote the spread and fruitful application of theories and methods of psychodrama, sociometry, and group psychotherapy in professional disciplines concerned with the well-being of individuals, groups, families, and organizations
4. to disseminate information about psychodrama, sociometry, and group psychotherapy and their applications to the general public, other professionals, and public policy makers
5. to promote and publish research in psychodrama, sociometry, and group psychotherapy and related fields
6. to maintain a code of professional standards relevant to the purposes of the society

Psychodrama involves spontaneous (unscripted and unrehearsed) role-plays, with group members serving as the actors and the psychotherapist serving as the director. Psychodrama uses guided dramatic action to examine problems or explore issues. It is used to facilitate insight, clarify issues, and enhance learning and development of new skills, personal growth, and emotional and physical well-being. Psychodrama helps individuals find new solutions to problems. *Sociometry* is a method of measuring social relationships. Sociometry views individuals in relation to others in a group, explores interpersonal choices, and looks at networks and alliances within a group. Sociometry can be used to examine group dynamics, roles, values, and interpersonal relationships. Sociometry may reduce conflicts, increase group cohesion and productivity, increase awareness and empathy, and facilitate constructive change in individuals and groups.

The ASGPP publishes the *Journal of Group Psychotherapy, Psychodrama, and Sociometry* and the *Psychodrama Network News*.

See also group therapy, psychodrama.

Further Reading:

American Society of Group Psychotherapy and Psychodrama Web site: http://www.asgpp.org/

Amusement

Amusement is the experiencing of an event or situation as humorous and is typically associated with feeling happiness and pleasure. When amused, a person often laughs. Amusement is individually related; what amuses one person may not amuse another.

Amusement as an experience has most often been studied in the broader context of humor. The study of humor involves investigating not only one's reaction to an event or situation (amusement) but also the stimulus that led to the feeling of amusement and other circumstances surrounding the humor situation. Humor expert Rod Martin (2007) has written a book in which he integrates the diverse psychological perspectives on humor. The book provides overviews of the leading theories on humor, including Freudian, cognitive, and arousal-based theories. Martin also reviews developmental aspects of humor, discussing when amusement begins in children, personality influences on humor, cognitive aspects of humor, humor in social contexts, humor and both mental and physical health, and other topics.

Being amused often involves laughing. Robert Provine's (2001) research on laughing may provide clues about the experience of amusement. When laughing, an individual starts with a sound, for instance, *ha*, *he*, or *ho*, and nearly always continues with the same sound, for instance, *ha ha ha ha ha* but not *he ha ha ho he ho he ha*. Each *ha*, *he*, or *ho* lasts about 1/15 of a second, and the period of time between each *ha*, *he*, or *ho* and the next is 1/5 of a second. These time intervals are consistent across people of different ages and backgrounds, which leads Provine to argue that there is a biological basis for laughing in this way. Laughing is also a type of communication, says Provine. We laugh much more when we are in social situations than when we are alone. These findings and others could suggest that amusement is part of our biological heritage and that amusement serves a social function. However, some research fails to support the idea that laugher and amusement must be connected. For instance, in other studies conducted by Provine (2001), he and his research students found that people laugh more when they talk than when they listen to others, and also, they laugh the most when they say things that appear not to be funny. For instance, people laugh frequently when they say very ordinary things, such as, "I'll see you tomorrow. Ha ha ha!" or "OK, let's go! Ha ha ha!"

Research on amusement and the closely related broader topic of humor is ongoing. Much about these topics is still basically unknown such as why different people have such different senses of humor.

See also happiness, joy, pleasure, positive emotions.

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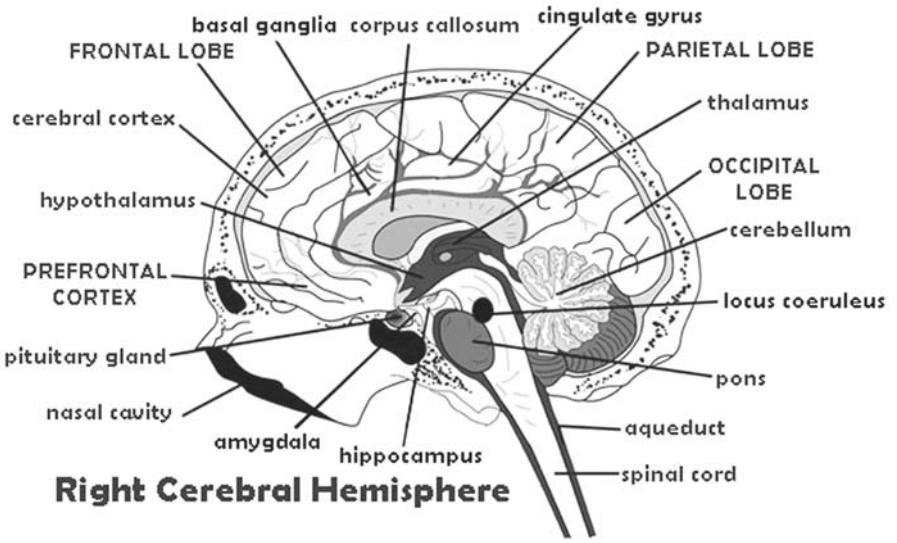
Amygdala

The amygdalas are located in the temporal lobes of the central hemispheres of the brain and are composed of several groups of neurons (nuclei), including the basolateral complex, the centromedial nucleus, and the cortical nucleus. Primary roles of the amygdala in regard to emotion are to interpret emotion-provoking stimuli and to store memories related to the emotional stimuli. The amygdala is also involved in triggering fight-or-flight (stress) responses, and dysfunction of the amygdala may be indicated in some mental disor



A diagram of the human brain. (ABC-CLIO)

A number of studies have shown that the amygdala increases in activity when emotions are perceived. Neurons in the left amygdala become active when either a fearful (Breiter et al., 1996) or a sad face (Blair, Morris, Frith, Perrett, & Dolan, 1999) is presented to research participants. Also, the amygdala becomes active when people experience unpleasant odors (Zald, 2003). LeDoux (1996) argues that the amygdala is involved in learning the emotional significance of stimuli. Many events (stimuli) are automatically (without learning) experienced as pleasant or unpleasant to organisms. For instance, food is experienced as pleasant and pain as unpleasant. Through life experience, organisms learn that other stimuli are associated with these naturally pleasant or unpleasant events; some stimuli are signals or signs of the appearance of such events. For example, a person may begin to associate a particular person (e.g., his mother) with pleasant events and another person (e.g., the grumpy, critical neighbor down the street) with unpleasant events. It appears that the amygdala is necessary for organisms to learn these associations. As a specific example, a number of researchers have shown that damage to the amygdala can render an animal unable to learn new fears through conditioning (e.g., Schafe et al., 2000).

LeDoux (1996) and Kapp, Pascoe, and Bixler (1984) discuss how the amygdala receives sensory information from another brain structure, the thalamus, and begins to initiate fear responses (e.g., increased heart rate). The amygdala processes the emotion-provoking stimuli and initiates the nervous activity in parts of the brain stem. Subsequently, these structures activate the sympathetic nervous system, transmitting the information through the spinal cord to the entire body. As a result of the activation of the fight-or-flight system, one experiences emotional arousal and many physical symptoms such as pounding heart, dilated pupils, and changed

(usually increased) respiration. The release of epinephrine and norepinephrine in this process makes people vigilant as well.

Results of several studies indicate that abnormal anatomy or activity of the amygdala is associated with some mental disorders. Some studies show that individuals suffering from bipolar disorder (called *manic depression* in the past) have enlarged amygdalas (e.g., Altshuler, Bartzokis, Grieder, Curran, & Mintz, 1998). Other research indicates that depressed people have elevated activity in their amygdalas (e.g., Nofzinger et al., 1999).

The amygdala is an important brain area involved in emotion. Research on the amygdala and emotion continues, with the relatively new area of the relationship between the amygdala and mental disorders being especially fruitful.

See also fear, limbic system, stress.

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Anger

Anger is one of our most passionate emotions, and potentially one of the most dangerous. Our scientific understanding of anger has developed over the decades, but behavioral scientists still lack clarity in their conceptions of anger and related emotions, whereas conceptions of some other emotions, such as fear, are better developed. For instance, fear and anxiety have been distinguished, with fear describing a reaction to a specific stimulus and anxiety describing a more generalized reaction. Scientists could, and possibly should, develop more refined concepts of anger and related states.

Definitions of anger vary and have different foci. Kalat and Shiota (2007) describe anger as the emotional state associated with a wish to hurt someone or to push him away. If anger is defined from the point of view of its function, anger is related to self-defense or to the overcoming of obstacles that stand in the way of reaching a goal (e.g., Saarni, Campos, Camras, & Witherington, 2006). Whether anger is defined from a more affective or a more functionalist viewpoint, it is typically a response to a specific stimulus, whether real or imagined—a threat, an unpleasant or annoying situation, an unfair situation, and so forth. Most theorists agree that anger is a drive—it is associated with a compulsion to respond to whatever caused it. For this reason, anger is often linked with aggression.

What exactly elicits an anger reaction can vary from person to person. Scherer and Wallbott (1994) conducted research on the most common causes of anger. They found that people most often felt angry in situations that were unpleasant, unfair, and intentionally caused by someone else. This study and others have suggested that in many cases, anger and blame go hand in hand. However, blame is not *necessary* for anger. For instance, an individual may become angry when she is frustrated, such as when she is busy working on her computer to meet a deadline and the computer is slow and keeps crashing. She may want to hit the computer. Likely there is no person to blame in this circumstance, but many people would describe their emotional reaction as one of anger.

Attempts to explain all causes of anger with a single theory have so far proved unsuccessful; competing theories exist about what causes anger and how anger is related to aggressive behavior. One leading theory is that either pain/discomfort or believing that someone has hostile intent toward one causes anger, and anger directly leads to aggressive behavior. This theory is called *Berkowitz's cognitive neoassociationistic* (CNA) model of anger generation. According to a leading competing theory, the *appraisal theory of aggression*, appraisal of hostile intent is necessary for anger, and adding pain or discomfort will increase the anger. Either the pain/discomfort by itself or the anger (which includes both pain/discomfort and appraisal of hostile intent) may lead to aggressive behavior. A key difference in these theories is whether we need to blame someone to become angry (according to the appraisal theory, we do, whereas according to the CNA model, we do not). Kalat and Shiota (2007) suggest that both theories could be correct, but for different ages. Children, especially infants, could become frustrated and then angry, then perhaps aggressive, without any appraisal of hostile intent. For instance, removing a source of amusement, such as a rattle, from an infant's grasp often produces an angry facial expression in the infant. Most researchers believe that very young children are not attributing blame. However, adults are more likely to add a cognitive (thinking) component to their experience of anger and more often attribute blame.

Researchers interested in anger have attempted to address the question of whether anger is an inborn emotion. One way to examine this issue is to observe the facial expression of emotion and evaluate the degree to which it is similar across cultures. Consistent with a genetic interpretation, American psychologist Paul Ekman, who has done extensive cross-cultural research on emotional expression, found that people around the world recognize an angry facial expression (Ekman et al., 1987).

Considerable research has been conducted on biological aspects of anger. Researchers have not found a single biological mechanism that is associated with

producing either anger or aggression. However, there is some consensus that anger and aggression are much more likely in people who are deficient in biological mechanisms that normally inhibit anger and aggression. Damage to the prefrontal cortex of the brain is linked with increased aggression (e.g., Anderson, Bechara, Damasio, Tranel, & Damasio, 1999). Additionally, two chemicals in the body may dysfunction in people who are aggressive: the hormone testosterone and the neurotransmitter (chemical messenger in the brain) serotonin. Nelson's (2005) edited book reviews research on biological aspects of aggression.

Anger is an emotion that can motivate constructive behaviors, such as standing up for one's rights, but it can also prompt destructive displays of verbal aggression, possibly permanently harming relationships, or of physical aggression, potentially leading to serious injury that ruins the lives of both the recipient and the perpetrator of the violence. Given the importance of this emotion, our theoretical understanding and research-based knowledge are relatively unsophisticated. This leaves room for innovative and productive studies that will shed new light on anger and its causes and provide information that will help people to channel anger constructively.

See also aggression, anger management.

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Anger Management

Anger is one of our most familiar emotions. Although anger has the potential to be constructive, motivating us to stand up for ourselves or for others, sometimes anger can become toxic. At times it is necessary to learn how to control this emotion.

A classic text on anger and anger management was published in 1975 and authored by psychologist Raymond Novaco. He described stress inoculation training, which is also used for management of anxiety and related conditions, as a method for managing anger.

Stress inoculation training for anger involves five main steps. Step one is learning how to relax with deep relaxation techniques. Examples of recommended strategies are progressive muscle relaxation, in which one progressively tenses and relaxes muscle groups throughout the body, and visualization of a special place in which you can relax (e.g., the beach, the woods, on top of a mountain). For stress inoculation to be effective, it is important that one master these relaxation techniques. For instance, in visualizing one's special place, one should be able to conjure it up rapidly in a stressful situation and thereby reduce one's stress. Mastery may take a few weeks.

Step two is developing an anger hierarchy. The individual with the anger issue is instructed to write down at least 25 or 30 anger-inducing situations on a piece of paper. She next gets out a new piece of paper, selects the least anger-inducing and the most anger-inducing situations on the list, and places them at the top and bottom, respectively, of a new list. She chooses between 6 and 18 of the other items to place between these 2 so that an anger hierarchy with approximately equal anger increments between each item is created.

Step three involves producing stress-coping thoughts for anger. According to McKay (1992), two types of thoughts tend to trigger anger: *should* statements and blaming statements. *Should* statements are based in the notion that someone else has done something wrong or has violated rules or norms. Usually, the person who is angry or somebody who she cares about was on the receiving end of the wrong act. One problem with this assumption is that people often disagree about what is appropriate, correct, or fair. A second problem, according to McKay, is that people often do what is right for them—what is in their self-interest—rather than what they should do. McKay suggests a number of statements one could say to oneself to cope with this idea of *should*, for instance, "My desire doesn't obligate you to meet it," "People are doing what they want to do, not what I think they should do," "I may not like it, but they're doing the best they can," "Nobody is right and nobody is wrong; we just have different needs," and "People only change when they want to."

Blaming statements may also lead to anger. When a person produces blaming statements, she believes that the pain or frustration she is feeling is caused by someone else. Also, she may believe that the other person is malicious, hurting her on purpose. Some examples of coping statements to deal with blaming include the following: "Blaming just upsets me; it doesn't solve the problem," "They're not out to get me; they're just pursuing their self-interests," and "This is not personal." Step three is an important part of stress inoculation, which must be personally tailored. Davis, Eshelman, and McKay (2008) provide many examples of possible coping statements and more detail about how to create personalized coping statements and what to do with them.

Step four involves putting together the skills developed in steps one through three and using them in one's imagination. First, the individual uses relaxation techniques, such as progressive muscle relaxation or imagery or both, for 10 to 15 minutes. Second, she selects the first item on the anger hierarchy (least anger inducing) and vividly visualizes the stressor. All of the senses should be actively engaged to feel like one is in the situation, intensely feeling the wrongness and unfairness. Both psychological and physical [illegible] should result. Third, the individual practices coping by inducing the se[illegible]laxation (e.g., in[illegible] the special place) and

repeating coping thoughts while continuing to imagine the anger-inducing situation. This should be done for at least a minute. Fourth, the individual rates anger level on a scale of 0 (no anger) to 10 (extremely intense anger). If the rating is 2 or above, the same situation should be repeated (imagining least anger-inducing item, etc.), this time trying different coping statements to relax. If it is one or zero, the individual may continue to the next event on the anger hierarchy and repeat the process. Eventually, all anger-inducing events on the hierarchy can be managed in one's imagination.

Step five involves using coping skills in real-life situations. In some cases, it is possible to anticipate a situation that could make one angry or frustrated. For example, an individual may intend to ask her boss with whom she has sometimes had interpersonal difficulty for a raise. Coping statements could be prepared in advance. Before meeting with the boss, the individual could engage in a relaxation technique and repeat coping statements to herself. If spontaneous anger-inducing situations occur, the individual is now better able to handle them (it is hoped).

The preceding description is a summary of stress inoculation for anger. Several excellent books provide more detailed instruction, including Davis, Eshelman, and McKay's (2008) *The Relaxation and Stress Reduction Workbook* and McKay, Davis, and Fanning's (2007) *Thoughts & Feelings: Taking Control of Your Moods & Your Life*. Research has indicated that stress inoculation training can be effective for decreasing anger. For instance, in a review of research, Sprague and Thyer (2003) reported that stress inoculation is helpful for treating children and adolescents with a disorder that involves anger as a primary symptom: oppositional defiant disorder.

See also anger, progressive muscle relaxation.

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Angst

Angst is a German word meaning "fear" or "anxiety." In English, it is used to mean intense anxiety or distress. In both psychology and existential philosophy, fear and anxiety are distinguished. Fear tends to be focused on a particular object or

situation and can be reduced or even eliminated. Anxiety tends to be more general and diffuse and is harder to reduce. Angst is much closer in meaning to anxiety than to fear.

Existential philosophers discussed angst, creating unique descriptions and speculations about its origins. The 19th-century Danish philosopher Soren Kierkegaard, in *The Origins of Dread*, published in 1844, used the term to describe extreme despair and uncertainty in people caused by their state of freedom to choose. Whereas animals are driven by instinct, humans are not, and along with freedom and consciousness comes responsibility. According to Kierkegaard, this responsibility is to engage with the world. Engaging with the world means that one is not playing safe, simply doing what is socially acceptable and comfortable. Engagement is uncomfortable, creating uncertainty and anxiety. But this engagement is necessary for a meaningful life, and thus angst itself is typically a sign that an individual is living authentically. Kierkegaard discussed the connection between angst and being a good Christian. A good Christian is with God, possessing Godly values and attitudes. This means that the good Christian is not with the worldly and thus can experience a great deal of friction and conflict with fellow humans, creating angst.

The 20th-century German philosopher Martin Heidegger has a different view of the concept angst. Unlike Kierkegaard, Heidegger turned away from religion, and to Heidegger, angst did not signify spiritual responsibility in the same way that it did for Kierkegaard. For Heidegger, angst was a feeling more related to existence in general. Angst is a state that clearly represents human experience and existence because it is fear of nonexistence and of nothingness. Since, in angst, the fear is not directed toward a particular object, when asked what one fears, he will truthfully respond "I don't know" or "nothing." At the same time, he will feel anxiety and dread. To better understand what Heidegger meant by angst, one has to understand what he meant by nothing or nothingness. Rather than meaning the negation of objects or existence, a feeling of nothingness is more a feeling that objects are alien and uncanny. Feeling angst is similar to feeling fear in the dark, Heidegger said. Angst occurs in the presence of objects, of the world, but the person experiencing angst feels as if everything is drawing away from him; he feels as if the world has become alien and indifferent. Heidegger wrote about angst in his 1927 book *Being and Time* and elaborated on the concept in a 1929 lecture titled "What Is Metaphysics?"

See also anxiety, existential psychotherapy, fear.

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Anhedonia

People with anhedonia are unable to feel pleasure from such normally enjoyable activities as eating, playing sports, and talking with friends. The term *anhedonia*

means "without pleasure" in Greek. Although anhedonia was largely ignored as a symptom of depression for a long time, today it is recognized as one of the most important primary symptoms of major depressive disorder. The symptoms of anhedonia are also found in other mood and schizophrenic disorders and are sometimes associated with long-term use of particular drugs.

People with anhedonia exhibit unusually flat mood. They also have difficulty in reacting properly to emotional events. A severely depressed mother of a newborn baby, for instance, might experience no pleasure from holding her baby. This loss of pleasure sometimes prevents people from initiating meaningful activities. The lack of positive feelings associated with accomplishing tasks further lessens people's willingness to seek out pleasurable experiences.

From the point of view of neuroscience, researchers have proposed that anhedonia occurs with the breakdown of the brain's reward system called the reward pathway. In a classic study, James Olds (1955) identified neurons in the brain that appear to serve as a reward pathway. He demonstrated that animals would learn a number of different responses to get electronic stimulations of these neurons. Additional evidence of a physiological component of anhedonia are the withdrawal symptoms from drugs like cocaine and amphetamine; withdrawal from these drugs causes depression and anhedonia by depleting neurotransmitters (chemical messengers in the brain) like dopamine (e.g., Vacca, Ahn, & Phillips, 2007). It appears that some people who are addicted to these drugs for a long time begin to show symptoms of anhedonia. It is possible that this is due to a permanent breakdown of their pleasure pathways in the brain.

Anhedonia also helps distinguish depression from other disorders, especially anxiety disorders. Despite that depression is accompanied by the common negative emotions of sadness and fear, depression is different from other disorders in that it has combined symptoms of the diminished capacity to experience pleasure and (usually) the high levels of negative emotions. A person with major depressive disorder might feel that he is miserable and helpless. At the same time, he might have lost interest in all his favorite activities. Nevertheless, as mentioned earlier, anhedonia is not restricted to depressed people. People suffering from schizophrenia and personality disorders related to schizophrenia commonly experience anhedonia (e.g., Haslam & Rothschild, 1999). In those cases of schizophrenia in which anhedonia is present, there often is the existence of other negative symptoms (symptoms denoting a lack of something) like a reduction in speech and feelings of apathy.

See also depression, dysthymia, endogenous depression, major depressive disorder, mood disorder, neurotransmitter, pleasure, postpartum depression, schizoaffective disorder, schizophrenia, seasonal affective disorder.

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Animal-Assisted Therapy

Animal-assisted therapy (AAT) is a therapy for humans involving animal assistants. The therapy is intended to improve physical, cognitive, social, or emotional functioning. Examples of kinds of animals that are used in AAT are cats, dogs, horses, birds, dolphins, elephants, and rabbits. AAT has a long history; the first case likely occurred in 1792 at the York Retreat in England, a care facility that was founded by the Society of Friends (Quakers) to treat the mentally ill in progressively humane ways (e.g., allowing freedom of movement, medical treatment, opportunity to exercise, religious instruction; Pichot, Coulter, & Dolan, 2007). The founder, William Tuke, used the presence of farm animals to improve the well-being of the mentally ill. In more modern times, in the United States and other countries, AAT was developed following observations and research results from the 1990s and onward that pet owners may have better physical health and emotional well-being than non–pet owners.

Technically, AAT means that a certified therapist or health care professional is using an animal as an aspect of treatment for an individual in an individualized, written treatment plan with specific goals. However, the expression *animal-assisted therapy* is sometimes used less technically and may mean any use of animals designed to be therapeutic for humans. A related form of treatment is called *animal-assisted activities* (AAA). In this case, volunteers take their pets to nursing homes, hospitals, or other locations so that residents may pet and socialize with the animals.

Psychoanalyst Professor Sigmund Freud is shown with his dog in his office in Vienna, Austria, in 1937. Freud often used to keep his pet Chow in the therapy consulting room. (AP/Wide World Photos)

AAT may come in different forms. Settings may include the therapy room, mental health units, nursing homes, prisons, hospitals, schools, and businesses. In many contexts, the mere presence of the animal may qualify as a form of AAT. For instance, in therapy, the animal "co-therapist," such as a dog, may be present in the therapy room with the therapist and client. In other cases, AAT implies interaction between the human and the animal. For example, prior to a potentially painful procedure with a dentist, a patient (particularly a child) may be encouraged to pet, play with, and talk to a therapy animal. Another example of AAT is swimming with dolphins.

Nimer and Lundahl (2007) conducted a review of studies on the effects of AAT on emotional functioning. They found that AAT is moderately effective in improving functioning in four areas: autism-spectrum symptoms, medical difficulties, behavioral problems, and emotional well-being. However, AAT is not without controversy. For example, in 2007, researchers criticized dolphin-assisted therapy as ineffective and possibly harmful (Marino & Lilienfeld, 2007).

See also pet therapy.

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Animal Behavior Society

The Animal Behavior Society (ABS) is a nonprofit scientific group founded in Montreal in 1964 to encourage and promote the study of animal behavior. In the broadest sense, this includes studies using both descriptive and experimental methods under natural and controlled conditions. According to the ABS constitution, the society's purpose is to encourage "research and the dissemination of knowledge about animal behavior through publications, educational programs, and activities." Before the establishment of ABS, the Committee for the Study of Animal Societies under Natural Conditions (CSASUNC) was formed in 1947. CSASUNC members shared a common interest in what and why animals do what they do and a hope that an understanding of nonhuman social systems could be used to alleviate human social problems. ABS members are from all over the world but primarily from North, Central, and South America. Member disciplines are diverse, including experimental psychology, behavioral ecology, neuroscience, zoology, biology, applied ethology, and human ethology.

First published in 1953, *Animal Behaviour* is a major international journal with a wide audience, combining book reviews, papers, and research articles on all aspects of animal behavior. According to the ABS Web site, *Animal Behaviour* is the journal

of choice for biologists, ethologists (zoologists who study the behavior of animals in their natural habitats), psychologists, physiologists, and veterinarians who are interested in animal behavior.

According to their Web site, ABS "recognizes that animal-oriented groups or agencies, businesses, and the general public seek professional advice about animal behavior or about behavioral problems of animals. Certification is the means by which the ABS demonstrates to the public that certain individuals meet the minimum standards of education, experience, and ethics required of a professional applied animal behaviorist." Professionals are certified by ABS as applied or associate applied animal behaviorists. Certified applied animal behaviorists come from a variety of backgrounds, but they typically have a broad background in animal behavior theory and application.

Animal behaviorists conduct research and publish papers in peer-reviewed journals. They also consult with veterinarians and work in zoos, research laboratories, and other facilities to organize animal environmental enhancement programs. Applied animal behaviorists work with companion, farm, laboratory, and wild animals. They can have a significant impact on the welfare of animals by providing opportunities to reduce stress that results from the frustration of natural behaviors or by training alternate behaviors that provide mental stimulation and enrichment. For example, according to Dr. Stephen Zawistowski, executive vice president of the ASPCA, Dr. Temple Grandin (a well-known animal behavioral scientist who has autism) "has dramatically reduced the stress experienced by cattle brought to slaughter by modifying the chutes and ramps employed to move the animals from place to place. In zoo settings animals may show stereotyped, repeated behaviors as a result of boredom and limited opportunities to engage in species typical behaviors. Behaviorists who work at zoos and aquaria have developed a wide variety of protocols to provide animals with opportunities to express species typical behaviors. Food for primates can be hidden in puzzle boxes or scattered and covered with straw or hay. This allows primates to engage in their normal food searching and gathering behaviors." In another example, a device that leaks honey at random intervals can be placed into a tree for bears to find and lick. Food for cheetahs can be hung by a cable from an overhead pulley and rapidly dragged across their zoo enclosure to simulate a high-speed predatory chase.

See also pet therapy.

Further Reading:

Animal Behavior Society Web site: http://animalbehaviorsociety.org/

Animals

Scientists debate the degree to which the emotional experiences of animals resemble the emotional experiences of humans. Over 100 years ago, in his classic book *The Expression of the Emotions in Man and Animals*, Charles Darwin (1872/1998) described his and others' observations of apparent emotional expressions of animals, showed their similarity to emotional expressions of humans, and argued that emotional expression must have evolved through natural selection in the same way that other characteristics evolved. Since these early observations, thinking about and research on emotions in animals have increased and [illegible] in sophistication.

Darwin's book includes descriptions, drawings, and photographs of facial, body posture, and other types of emotional expressions in several species, including domestic dogs, domestic cats, several monkey species, several bird species, and humans. For instance, he described and graphically represented that a threatened dog or cat displays a snarling expression that looks similar to the angry expression of a human. As another example, he presented drawings of the *Cynopithecus niger* (a type of monkey) in a "placid" condition, during which it is expressionless, and immediately after being caressed. In the latter expression, the monkey appears to be smiling, and its face looks similar to the face of a happy person. Darwin described expressions associated with several emotions including sadness, anger, high spirits, contempt, disgust, fear, and surprise.

Research and thinking on emotions in animals has advanced significantly since Darwin's behavioral observations. We now also have knowledge from physiological research, neuroscience, cognitive psychology, and other fields. As American biologist Marc Bekoff (2008) describes in his book *The Emotional Lives of Animals*, nearly all biologists who have studied emotions in animals now agree that animals present emotional expressions that often parallel human expressions and agree on other details regarding emotional experience of animals. What the animal is actually feeling, however, is what remains most controversial. For instance, evolutionary biologist George Williams (1992, 1997) claims that we cannot assume that animals are feeling anything simply because they reveal other characteristics of emotion that are observable. He further states that the internal feelings of an animal are not something that we can ever know. Marc Bekoff and a colleague (Allen & Bekoff, 1997) point out what they believe is faulty logic on Williams's part.

Bekoff's (2008) more recent book discusses not only the observational, physiological, neuroscientific, and other research on emotions but also explains the functions of many of the emotions in both animals and humans. Bekoff argues that animals and humans have emotions, including the feeling component, in part as a social function. Many of the emotions serve as social glue; they aid the animals to bond with their own kind to enhance their individual survival and the survival of the group. Researchers have observed the social function of emotions, such as love, pleasure while playing together, empathy, and other emotions, across species. As Bekoff describes, the evidence that animals have feelings is overwhelming. Many examples exist of animals grieving the loss of a cub or a mate, joy on being reunited with a mother, and even unusual examples of cross-species friendships such as a dog and a duck or a gorilla and a cat. Bekoff argues that failing to believe that animals have rich emotional lives is bad science and that, after hearing some of the arguments that his critics have made about the possibility that animals may not have feelings (even if they possess other characteristics of emotions), he is glad he is not their dog!

See also animal-assisted therapy, anthropomorphism, Charles Darwin, deimatic, emotional expression, facial expression, pet therapy, primates.

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Anniversary Reaction

An anniversary reaction involves feelings, especially negative ones such as sadness, loss, anxiety, or anger; physical symptoms; changes in behavior, or any combination of these reactions on the anniversary date of a traumatic event or loss. In the earliest conceptions of anniversary reactions, they generally applied to responses to the death of a loved one. Since then, the concept has been applied to the experience of a major catastrophe in a community such as a flood, earthquake, hurricane, or bombing (e.g., Assanangkornchai, Tangboonngam, Sam-angsri, & Edwards, 2007); a personally traumatic event such as rape, physical assault, or a serious car accident (e.g., Musaph, 1990); and others—any personally meaningful event can potentially be associated with an anniversary reaction.

Edwin Wallace (1977) wrote a thought-provoking article in which he interpreted some of Sigmund Freud's academic works as the result of anniversary reactions to his father's death. For instance, according to Wallace, Freud discovered the oedipal complex (Freud's theory that boys aged about four to six develop romantic attractions to their mothers and feel intense jealousy and hostility toward their fathers, who are romantic rivals) on the first anniversary of his father's death. Wallace also suggests that two other significant writings of Freud's, *Beyond the Pleasure Principle* and *Moses and Monotheism*, were manifestations of the anniversary reaction that Freud had for many years following his father's death.

See also grief, loss, posttraumatic stress disorder.

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Anomie

In the *Oxford English Dictionary*, anomie is defined as a "lack of the usual social or ethical standards in an individual or group" (Soanes, 2008). The English word comes from the Greek *anomos*, meaning "[illegible]."

In more (relatively) modern times, the concept of anomie is most closely associated with French sociologist Emile Durkheim. In 1893, in his book *The Division of Labor in Society*, Durkheim spoke of anomie as a state of society. When anomie occurs, society has eroded into normlessness. Individuals no longer know what the norms or rules are that govern their behavior. They therefore do not know how to act, nor do they know what to expect from others. Anomie occurs more often in modern society than it occurred in earlier ones. In preindustrial societies, people worked together for the good of the group, and the connections between one's work, others' work, and the common good, including survival, were clear. In modern societies, which are more complex, more division of labor occurs and people do not necessarily have a sense of working together for the survival of the group. Instead, division of labor tends to lead to people pursuing self-interested goals rather than goals that benefit the group. Anomie is particularly likely to occur if circumstances in a society change quickly such as during a major financial change. During periods of transition, old norms and rules may not seem appropriate, yet new ones have not yet arisen. The lack of rules and norms may leave individuals uncertain even about the difference between right and wrong. A sense of purposelessness and alienation may ensue. Anomie creates a downward spiral for the society, a further disintegration of the structure and stability of the society itself.

Soon after discussing this type of anomie, Durkheim, in his 1897 book *Suicide*, spoke of a personal, internal experience. The individual becomes valueless, no longer knows the difference between right and wrong, and begins to feel purposelessness and alienation from other people and from his own society. Durkheim's discussion differed from other examinations of suicide that tended to focus on individual causes; he focused on social causes. This individual experience of anomie may occur because the individual does not perceive that he has a role or place in society. Along with purposelessness and alienation, he may suffer extreme anxiety or depression, or both. These feelings may become intense enough that the individual commits suicide.

Anomie and alienation are themes in some examples of famous literature. For instance, in Kafka's *The Metamorphosis*, a human being has turned into a cockroach; his resultant alienation from the world is portrayed in his interactions with his family, who do not recognize him. Dostoevsky's novels also commonly involved motifs of alienation and anomie. In *Crime and Punishment*, Raskolnikov rebels from the norms and morality of society, planning and committing a murder of a "useless" (but basically innocent) person.

While anomie has not received a great deal of theoretical or research attention since Durkheim, some famous theories do utilize the concept. For instance, American sociologist Robert K. Merton (1949), in strain theory, said that anomie could occur when an individual tried to achieve goals consistent with the norms of society but was unable to attain these goals. The individual could feel normlessness and alienation because of her failure. This lack of success and the resultant anomie may lead to deviant, even criminal behavior.

See also alienation.

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Anterior Cingulate Cortex

The anterior cingulate cortex (ACC) is the front (anterior) part of the cingulate cortex. The cingulate cortex forms a collar around the *corpus callosum*, a bundle of nerve fibers that carries messages between the right and left hemispheres of the brain. It is associated with some autonomic functions (e.g., regulation of blood pressure and heart rate) and various cognitive and emotional functions, including decision making, reward anticipation, empathy, motivation, and initiation of goal-directed behaviors. The ACC is involved with mood changes, depression, anxiety disorders, and the perception of pain. ACC functioning is not only affected by activation of the ACC itself but also by connections and communication between the ACC and other brain regions.

Imaging techniques such as functional magnetic resonance imaging (fMRI) and positron emission tomography have provided information about the role and functioning of the ACC. Other information has come from studies involving people with ACC injury or disease. Studies of individuals with cingulate epilepsy have provided support for the role of the ACC in movement, emotion, and social behavior (Devinsky, Morrell, & Vogt, 1995). *Elevated* ACC activity has been associated with anxiety disorders, tics, Tourette's syndrome, obsessive-compulsive disorder (OCD), phobias, and posttraumatic stress disorder. *Reduced* ACC activity has been associated with lethargy, apathy, psychomotor retardation (slowing of thoughts and physical movements and reactions), and depression (Hale & Fiorello, 2004). Abnormalities in ACC activation have been found in individuals with schizophrenia during activities involving attempts to regulate mood and behavior as well as executive function tasks such as planning and focusing attention (Phillips, Drevets, Rauch, & Lane, 2003). Anterior cingulate syndrome, which is caused by damage to the ACC, can result in profound apathy and *akinetic mutism*—a state in which an individual neither speaks nor moves (Mashour, Walker, & Martuza, 2005). While damage to the ACC does not appear to cause problems on most cognitive tests, ACC damage has been associated with poor performance on Stroop tasks. The Stroop task requires a respondent to view a color word (e.g., *red*) that is printed in ink of a different color (e.g., blue). This places demands on an individual to suppress the impulse to read the word and focus on the relevant information (the ink color). Observations have shown that individuals with ACC lesions (wounds) demonstrate apathy and a lack of concern when making significant errors (Luu & Posner, 2003). Interestingly, while abnormal ACC activity has been found in some individuals with mood and anxiety disorders (e.g., OCD and depression), types of psychosurgery that create lesions in the ACC (e.g., cingulotomy and limbic leucotomy) have been used to treat severe cases of these same disorders (Mashour et al., 2005).

Childhood lead exposure has been associated with significant problems with cognition, executive function, motor abilities, and social behavior. An fMRI study of the brains of adults who had been exposed to lead as children showed a reduction in brain volume, especially affecting the ACC. Greater decrease in ACC volume was

related to greater lead exposure and linked to greater difficulties performing fine motor tasks (Cecil et al., 2008).

See also anxiety, depression, empathy, functional magnetic resonance imaging, obsessive-compulsive disorder, positron emission tomography, posttraumatic stress disorder, psychosurgery.

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Anthropomorphism

Anthropomorphism—from the Greek *anthrōpos* (man or the human species) plus *morphē* (a form or shape) and *-ismos*, indicating a state or condition—means attributing human qualities, including thoughts, motives, actions, or emotions, to nonhuman entities such as animals, deities, or machines (Colman, 2001). Fables of many cultures (e.g., the Greek Aesop's fables) use animals with human characteristics in parables that impart moral lessons. Literature uses personification, referring to Mother Nature or Father Time, and children learn young to recognize the man in the moon. People describe natural phenomena with human qualities—the wind moans, the storm rages, the sun is gentle.

Some theories as to why people anthropomorphize posit that humans are predisposed to perceive and interpret the world in terms of human forms, actions, and motivations; that people see what is familiar and understandable to them. Another explanation claims that anthropomorphism is a way for humans to explain a mysterious or unfamiliar world. Sigmund Freud believed that people anthropomorphize for emotional reasons: to make a hostile world seem less frightening or more familiar (Encyclopædia Britannica, 2008).

An early commentator on anthropomorphism, Greek philosopher Xenophanes (ca. 560–478 BC) warned against thinking about the gods in human terms. Some religions, based on the belief that humans were shaped in the image of the creator, ascribe human-like features to God—a mouth to speak or ears to hear people's prayers. In keeping with the principle of *parsimony*, which states that people should make as few assumptions as possible when constructing scientific explanation, 20th-century behaviorist B.F. Skinner claimed that animal behavior was a set of

responses shaped by learning and conditioning, not the result of any human-like intention, emotion, or reasoning. Skinner and other scientists have cautioned against anthropomorphizing, making assumptions about animal's motivations, intentions, or thought processes (Encyclopædia Britannica, 2008). The flip side of anthropomorphism is termed *anthrodenial* by primatologist Frans de Waal: "a blindness to the humanlike characteristics of other animals, or the animal-like characteristics of ourselves" (de Waal, 1997, p. 51). De Waal claims that while there is a risk of overinterpreting animal behavior or mental life in human terms, there is also a risk of underinterpreting it. Animal behavior should always be interpreted in the context of a species habitat and history. In keeping with the traditions of René Descartes and others who claimed that only humans have souls, there can be a tendency to minimize or reject similarities between the behavior and motivation of humans and other animal species to separate humans from other animals.

See also animals.

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Antidepressant

Antidepressants are medications primarily used to treat clinical depression. Antidepressants have also been used to treat anxiety (including generalized anxiety, social anxiety, and panic disorder), obsessive-compulsive disorder, posttraumatic stress disorder, chronic pain, narcolepsy, alcoholism, bulimia, Parkinson's disease, and attention-deficit hyperactivity disorder and to aid in smoking cessation.

In the first half of the 20th century, treatments for depression included stimulants (e.g., amphetamine), chemical shock, and electric shock therapy (Lieberman, 2003). The first antidepressants were discovered inadvertently in the 1950s when a tuberculosis medication, iproniazid (Marsilid, Iprozid, Rivivol), was found to improve patients' moods (Preston, O'Neal, & Talaga, 2008). It was found that iproniazid inhibited monoamine oxidase (MAO), an enzyme that breaks down the neurotransmitters (chemical messengers) serotonin, dopamine, and norepinephrine in neurons. This discovery led to the development of the first class of antidepressant medication, the monoamine oxidase inhibitors (MAOIs, e.g., Marplan, Nardil, selegiline). Imipramine, developed as an antipsychotic in the 1950s, was also found to have antidepressant properties. Imipramine (Tofranil) was followed by the development of amitriptyline (Elavil) and other cyclic antidepressants (Preston et al., 2008). The cyclic antidepressants include the tricyclic (TCA, e.g., Sinequan) and tetracyclic (e.g., Serzone, Trazodone) antidepressants. In addition to the MAOIs and TCAs, other types of antidepressants include selective serotonin reuptake inhibitors (SSRIs, e.g., Prozac, Paxil, Zoloft), serotonin and norepinephrine reuptake inhibitors (SNRIs, e.g., Effexor), norepinephrine reuptake inhibitors (NRIs, e.g., maprotiline, reboxetine), and atypical antidepressants. Some of the atypicals include selective serotonin reuptake enhancers (SSREs, e.g., tianeptine), noradrenergic and specific serotonergic antidepressants (NaSSAs, e.g., Remeron), muscarinic antagonists (e.g., dibenzepin), reversible inhibitors of monoamine oxidase A (RIMAs, e.g., Amutex),

dopamine reuptake inhibitors (DARIs, e.g., amineptine), and norepinephrine-dopamine reuptake inhibitors (NDRIs, e.g., bupropion or Wellbutrin). Sometimes stimulants (e.g., Ritalin) are used to treat depression. One type of antidepressant may be used to augment treatment with an antidepressant of a different type.

Some research demonstrates that alternatives to pharmaceutical antidepressants such as St. John's wort (an herb) and S-adenosyl-L-methionine (SAMe), a substance found in the body, show some efficacy in the treatment of depression (Agency for Healthcare Research and Quality, 2002; National Center for Complementary and Alternative Medicine, 2004). Other complementary treatments—such as L-tryptophan (a natural antidepressant found in foods such as turkey, potatoes, and milk), 5-hydroxytryptophan (5-HTP), melatonin, tyrosine, amino acids, vitamins, and minerals—have less solid research backing, and there is a great deal of controversy regarding their efficacy, side effects, and potential drug interactions.

Side effects of antidepressants vary by type of antidepressant. TCA side effects can be grouped into four categories: anticholinergic (dry mouth, dry skin, blurred vision, constipation), adrenergic (sweating, sexual dysfunction, sudden drop in blood pressure), antihistaminic (sedation, weight gain), and miscellaneous (e.g., lowered seizure threshold, cardiac arrhythmia, elevated heart rate, hepatitis, rashes, sweating, anxiety; Preston et al., 2008). Common side effects of SSRIs, SNRIs, NRIs, and atypical antidepressants include anxiety, sedation, insomnia, nausea, and sexual dysfunction. MAOIs are used in the treatment of major depression or panic disorder generally only after other antidepressants have failed due to potentially fatal severe hypertensive (high blood pressure) reactions that can be caused by taking decongestants or other antidepressants, or by eating foods high in tyramine (e.g., salami, chicken liver, some sausages, some types of fish, bologna, beef bouillon, sauerkraut, some types of beer or wine). Other side effects of MAOIs may include sedation, agitation, confusion, insomnia, a sudden drop in blood pressure, and edema. A disadvantage of most antidepressants is that side effects are often experienced before therapeutic effects. For example, someone taking an SSRI may have to endure uncomfortable side effects for six to eight weeks before seeing any therapeutic benefits (i.e., reduction of target symptoms). This can cause some people to discontinue antidepressant treatment before realizing any benefits.

Serotonin syndrome—a potentially lethal condition resulting from toxic levels of serotonin in the central nervous system—can result from combining antidepressants (SSRIs, MAOIs, TCAs, SNRIs, bupropion) with each other or with some opioids (e.g., tramadol, fentanyl), triptans (antimigraine medications), stimulants (e.g., amphetamines, cocaine), psychedelics (e.g., MDMA or Ecstasy), herbs (e.g., St. John's wort), and various other medications and over-the-counter products. Symptoms of serotonin syndrome may include rapid heart rate, sweating, shivering, dilated pupils, tremor or twitching, muscular rigidity, elevated temperature, confusion, agitation, delirium, hallucinations, coma, or death. In 2002, the Toxic Exposure Surveillance System reported 26,733 incidents of toxic effects from SSRIs, resulting in 93 deaths (Boyer & Shannon, 2005). This is thought to be a conservative estimate due to underreporting and lack of physician awareness of serotonin syndrome, which occurs in 14 to 16 percent of individuals who overdose on SSRIs (Boyer & Shannon, 2005). Combining antidepressants and alcohol is not advisable; alcohol, a depressant, can worsen clinical depression. Alcohol can also increase the toxicity of some types of antidepressants such as [illegible].

Some antidepressants are started at a low (less than therapeutic) dose and are titrated (increased) upward until a therapeutic dosage is reached. This may be done to minimize side effects and to help gauge the most beneficial dose for an individual. Sudden discontinuation of some types of antidepressants (SSRIs, MAOIs, some of the atypicals) can result in a withdrawal syndrome. Withdrawal symptoms can vary but may include dizziness, nausea, sweating, insomnia, tremor, or confusion. A schedule for tapering off antidepressants should be discussed with a doctor. Risks of taking antidepressants while pregnant vary by type of antidepressant. Some (e.g., TCAs and MAOIs) either show evidence of maternal harm or harm to the fetus, or risk cannot be ruled out. SSRI use during pregnancy may increase prenatal complications and adversely affect the newborn (Preston et al., 2008). Antidepressants should only be taken as prescribed while under the care of a doctor. To avoid potentially harmful side effects and drug interactions, health care consumers should be sure that their doctors and pharmacists are aware of *all* medications they are taking, including over-the-counter medications, herbs and natural remedies, and dietary supplements.

The monoamine hypothesis—the main theory spurring development of earlier antidepressants such as TCAs, MAOIs, and SSRIs—holds that the antidepressant effect of these medications is achieved by inhibiting the reuptake or breakdown of monoamine neurotransmitters (such as serotonin and norepinephrine), allowing more of these neurotransmitters to be available for neurotransmission. Recent research has shown that more complex mechanisms are at work. For example, some depressed people have been found to have elevated levels of cortisol (a stress hormone), deficiencies in brain-derived neurotrophic factor (BDNF; a substance involved in keeping neurons healthy), or atrophy in a brain structure, the hippocampus (Patterson, 2006). While development of new antidepressant medications continues, the mechanism of action of many antidepressant medications is not clearly understood (Patterson, 2006).

See also atypical antidepressants, complementary and alternative medicine, depression, major depressive disorder, monoamine oxidase inhibiter, Prozac (fluoxetine), selective serotonin reuptake inhibitor, St. John's wort, tricyclic antidepressant.

Further Readings:

American Psychiatric Association—Healthy Minds Web site: http://www.healthyminds.org/
Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/
National Alliance on Mental Illness Web site: http://www.nami.org/
National Center for Complementary and Alternative Medicine Web site: http://nccam.nih.gov/health/

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Antimanic

Antimanics are medications used in the treatment of bipolar disorder (formerly called *manic depressive disorder*). The terms *antimanic*, *bipolar medications*, and *mood stabilizer* are often used interchangeably. Bipolar disorder is a condition characterized by alternating episodes of mania (e.g., elevated mood, high energy, inflated self-esteem, grandiosity, risk-taking behavior), depression, and periods of normal mood and energy (also known as *euthymia*). Depending on the type of bipolar disorder, an individual may experience a combination of episode types: manic, depressive, or mixed (features of both mania and depression in the same episode). Some medications are more effective treating manic symptoms, others are used primarily to treat depressive symptoms, and some medications are effective on multiple symptoms. Since individuals respond differently to medications, treatment regimens must be individually tailored and closely monitored for effectiveness, treating target symptoms and any side effects.

Lithium, reported by Australian psychiatrist John Cade in 1949 and approved by the U.S. Food and Drug Administration in 1970, was the first effective treatment for bipolar disorder (Patterson, 2006). The anticonvulsants carbamazepine and valproic acid have also been used effectively as mood stabilizers for many years. Current treatment of bipolar disorder may include multiple mood stabilizers, antidepressants, antipsychotics, and benzodiazepines (Preston, O'Neal, & Talaga, 2008). While all these medications are used to treat the symptoms of bipolar disorder, *mood stabilizers* typically refers to lithium, anticonvulsants, and any medications that help prevent switching into a manic or depressive episode. *Antimanic* more often refers to those medications that treat symptoms or prevent occurrences of mania.

Lithium is a relatively safe treatment and is effective in the treatment of acute mania and prevention of manic and depressive episodes in 60 to 80 percent of cases (Preston et al., 2008). Lithium has a narrow therapeutic window—the difference between a therapeutically effective dose and a toxic one is very small—therefore frequent monitoring of blood level lithium concentrations is necessary (Preston et al., 2008). After initiating lithium treatment, it may take from five days to two weeks before experiencing therapeutic benefits. Side effects of lithium include gastrointestinal (nausea, vomiting, diarrhea), headache, lethargy, muscle weakness, hand tremors, rash, acne, and weight gain. Some side effects, such as confusion, stupor, slurred speech, or worsening tremor or gastrointestinal symptoms, may be signs of lithium toxicity, which can cause seizures, coma, or death. Lithium can cause some hormonal changes, so periodic monitoring of thyroid function is recommended. Since lithium depends on the kidneys for excretion, it is important for individuals taking lithium to stay well hydrated (Preston et al., 2008). Lithium should not be taken during pregnancy. The mechanism of action for lithium is not clearly understood. It may work through its ability to stabilize cell membranes; its effects on the neurotransmitters (chemical messengers) dopamine, norepinephrine, and serotonin; or its neuroprotective properties (protecting against destructive consequences of certain biochemical processes in the brain; Preston et al., 2008).

The anticonvulsants carbamazepine (Tegretol Equetro), valproic acid (divalproex, Depakote), and lamotrigine (Lamictal) are all effective mood stabilizers. Other anticonvulsants used as mood stabilizers include gabapentin (Neurontin), topiramate (Topamax), tiagabine (Gabatril), oxcarbazepine (Trileptal), and pregabilin (Lyrica). The mechanisms of action for the anticonvulsants have not been conclusively identified. Some anticonvulsants have demonstrated neuroprotective properties. Anticonvulsants are believed to affect the activity of certain neurotransmitters (chemical messengers)—increasing the activity of gamma-aminobutyric acid or inhibiting the activity of glutamate (Preston et al., 2008). Side effects vary by anticonvulsant but may include sedation, dizziness, drowsiness, blurred vision, incoordination, gastrointestinal upset (nausea, vomiting, diarrhea, abdominal pain), rash, or hives. Some anticonvulsants (e.g., Topamax) can cause confusion or memory loss (Dulcan, 2007). Blood levels should be monitored frequently to identify potential toxicity (Preston et al., 2008). Use of some anticonvulsants (e.g., Depakote) during pregnancy has been associated with neural tube defects; risk cannot be ruled out for others (e.g., Tegretol; Preston et al., 2008).

Atypical antipsychotics used (alone or in conjunction with other medications) to treat mania and depression and for relapse prevention include olanzapine (Zyprexa), risperidone (Risperdal), ziprasidone (Geodon), aripiprazole (Abilify), quetiapine (Seroquel), and clozapine (Clozaril; Patterson, 2006).

See also bipolar disorder, complementary and alternative medicine, lithium therapy, mood stabilizer.

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Antipsychotic

Antipsychotics are medications used in the treatment of psychotic symptoms of schizophrenia, bipolar disorder, major depressive disorder with psychotic features, and psychosis related to substance use (e.g., methamphetamine, hallucinogens) or a medical condition (e.g., brain tumors, Alzheimer's disease, Parkinson's disease; Preston, O'Neal, & Talaga, 2008). Psychotic symptoms include delusions (false beliefs), seriously impaired perceptions (hallucinations), and disorganized thinking. Psychotic symptoms are divided into positive and negative symptoms: positive symptoms are typically excess or distorted behaviors relative to the individual's normal functioning, while negative symptoms are a decrease or loss of normal functioning. Schizophrenia is characterized by positive symptoms (e.g., hallucinations, delusions, disorganized speech, [illegible]), negative symptoms (e.g., flat affect, social withdrawal, poverty of speech), [illegible] cognitive deficits (e.g., difficulties with memory

or attention, thinking problems), and mood abnormalities (e.g., depression, aggression, anxiety, hostility). An individual with schizophrenia may not have all these symptoms; different subtypes of schizophrenia typically present with different combinations of symptoms.

Before antipsychotics were developed in the 1950s, treatment for psychosis consisted of shock therapy (e.g., electroconvulsive shock and induced insulin coma), barbiturates, psychosurgery (e.g., prefrontal lobotomy), physical restraint, and institutionalization (Patterson, 2006). The antipsychotic chlorpromazine (Thorazine) was first used as a postoperative sedative in 1952 (Preston et al., 2008). More first-generation (typical, conventional, standard) antipsychotics—phenothiazines—were developed soon thereafter, including haloperidol (Haldol), prochlorperazine (Compazine), thioridazine (Mellaril), thiothixene (Navane), and trifluoperazine (Stelazine). Phenothiazines work by blocking dopamine, a neurotransmitter (chemical messenger), in the brain.

First-generation antipsychotics are also referred to as neuroleptics because of their myriad neurological side effects, which can be classified into five groups: extrapyramidal, anticholinergic, antiadrenergic, tardive dyskinesia, and atypical side effects. Extrapyramidal symptoms include parkinsonian side effects (shuffling gait, slowed movement, decreased facial expression, tremor), dystonic symptoms (e.g., muscle spasms in the neck or shoulders), and akathisia (an intense feeling of restlessness). Anticholinergic side effects include dry mouth, blurred vision, constipation, difficulty urinating, sedation, and sexual dysfunction. Antiadrenergic side effects can cause blood pressure to drop suddenly when a person stands up (orthostatic hypotension), leading to a feeling of lightheadedness and increased risk of falling. Tardive dyskinesia, which causes involuntary movements (e.g., protruding of the tongue, puffing of cheeks, chewing motions, and involuntary body movements), may not occur until after many years of treatment with antipsychotics (Patterson, 2006; Preston et al., 2008). Atypical side effects include histaminic side effects (weight gain, sedation, low blood pressure), lowered seizure threshold, and difficulties regulating body temperature. Another atypical side effect is elevated prolactin levels, which can lead to altered menstrual function, sexual dysfunction, and breast engorgement or milk production in both men and women (Patterson, 2006). A rare, potentially fatal condition called *neuroleptic malignant syndrome*, characterized by fever, confusion, and rigidity, can lead to coma and death (Preston et al., 2008). Different medications are used to treat different types of side effects. Extrapyramidal side effects may be managed by switching to a less potent antipsychotic or by adding an antiparkinsonian medication such as benztropine (Cogentin), trihexyphenidyl (Artane), or biperiden (Akineton; Preston et al., 2008). Akathisia may be treated with antiparkinsonian medications, benzodiazepines (e.g., Valium), or beta blockers (e.g., propranolol). Antihistamines such as diphenhydramine (Benadryl) may be used to treat atypical histaminic side effects. A dopamine agonist such as amantadine (Symmetrel) may be used to treat parkinsonian symptoms and increased prolactin levels (Patterson, 2006).

The first atypical antipsychotic (also referred to as second-generation or novel antipsychotics) was clozapine (Clozaril). Other atypicals include olanzapine (Zyprexa), risperidone (Risperdal), ziprasidone (Geodon), quetiapine (Seroquel), and amisulpride (Solian). Atypical antipsychotics are strong blockers of the neurotransmitter

(chemical messenger) serotonin blockers and have varying degrees of dopamine blocking. They are generally an improvement over the first-generation antipsychotics: they are still effective agents against psychotic symptoms, without as many side effects. While first-generation antipsychotics tend to be effective only for treating positive symptoms (e.g., hallucinations and delusions), atypicals are also effective for treating negative symptoms (e.g., flat affect, social withdrawal). Side effects of atypicals vary by medication but may include sedation, dry mouth, and weight gain. Most of the atypicals have a reduced risk of tardive dyskinesia, and some have a reduced risk of extrapyramidal symptoms (e.g., Zyprexa, Seroquel). Aripiprazole (Abilify), a dopamine partial agonist, is sometimes referred to as a third-generation antipsychotic because of its unique mechanism of action: it decreases dopamine levels where they are too high in the brain, increases them where they are too low, and does not affect dopamine levels elsewhere, avoiding many of the side effects of the other atypicals (Patterson, 2006). Abilify can cause nausea and anxiety but is less sedating and may cause less weight gain than some other antipsychotics (Preston et al., 2008).

While it is generally believed that atypical antipsychotics are preferable to older (first generation) antipsychotics, this is not always the case. An analysis of many studies about antipsychotics found that only four out of nine atypicals (amisulpride, clozapine, olanzapine, and risperidone) were more effective than first-generation antipsychotics (Leucht, Wahlbeck, Hamann, & Kissling, 2003). Risks of taking antipsychotics (both first generation and atypicals) during pregnancy cannot be ruled out. To avoid harm to mother and fetus, potential risks should be discussed with a doctor (Preston et al., 2008).

Omega-3 fatty acids, found in fish, seafood, flax seeds, and eggs, have been studied for the treatment of schizophrenia. Research has produced inconsistent and conflicting results regarding the efficacy of omega-3 fatty acids in the treatment of schizophrenia (Peet & Stokes, 2005; Ross, Seguin, & Sieswerda, 2007). Other alternative antipsychotics, such as glycine, vitamin B_3 (niacin), rauwolfia (*Rauwolfia serpentina*), and betel nut (*Areca catechu*), have yielded inconclusive results (Hoffer, 2008; Javitt et al., 2001; Lakhan & Vieira, 2008; Sullivan, Andres, Otto, Miles, & Kydd, 2007; Werneke, Turner, & Priebe, 2006). More research is needed to determine the safety and effectiveness of these approaches for treating psychotic symptoms. For more information about risks and benefits associated with alternative treatments, visit the National Center for Complementary and Alternative Medicine Web site.

See also antidepressant, antimanic, benzodiazepine, complementary and alternative medicine, lithium therapy, schizoaffective disorder, schizophrenia.

Further Readings:

American Psychiatric Association—Healthy Minds Web site: http://www.healthyminds.org/

National Alliance on Mental Illness Web site: http://www.nami.org/

National Center for Complementary and Alternative Medicine Web site: http://nccam.nih.gov/health/

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Anxiety

Nearly everyone experiences moderate anxiety at some point in her lifetime, and most of us feel anxiety, at least in small degrees, nearly every day (hesitancy to approach a stranger due to fear of rejection, worries about money, concerns about what others think, etc.). Anxiety is experienced at multiple levels. Subjectively, it is a largely negative emotion. Behaviorally, it often manifests as avoidance; the anxious individual may become relatively socially withdrawn or otherwise timid. Physiologically, it involves activation of the sympathetic nervous system, which produces the stress response. Physiological symptoms include increased heart rate, blood pressure, and respiration, release of stress hormones, and others. Chronic anxiety can also bring fatigue, difficulty sleeping, muscle tension, and irritability.

Anxiety is a reaction to a perceived threat, as is fear. Unlike fear, however, which is a reaction to a specific stimulus or event, anxiety is often more diffuse or of uncertain origin. In general, compared to fear, which occurs immediately after an event has transpired, anxiety is centered on a possible experience in the future. In terms of brain structures, anxiety appears to be related to activity of a part of the stria terminalis (see Walker, Toufexis, & Davis, 2003). As Davis and his colleagues describe, the bed nucleus of the stria terminalis receives sensory input from a part of the brain (the thalamus) and, through connections with other anatomical structures (i.e., the hypothalamus of the brain and the brain stem), initiates long-lasting sympathetic nervous system responses (increased heart rate, etc.) in reaction to relatively vague threatening contexts. This action is different from, but overlaps with, the reaction that occurs with fear. In fear, the thalamus sends information to part of the amygdala, which, like the stria terminalis, [illegible] connections with anatomical structures that initiate sympathetic nervous system activity. Through this circuit,

a reaction is produced to specific threatening stimuli (loud noise, bear approaching, etc.); the fear response is similar to anxiety (increased heart rate, blood pressure, etc.) but tends to be more intense and of shorter duration.

Particular brain chemicals are implicated in anxiety. The chemical that has been most studied is the neurotransmitter gamma-aminobutyric acid (GABA). GABA is the main brain chemical that inhibits the activity of neurons (i.e., when GABA interacts with a neuron, the result is that the usual activity of that neuron, i.e., firing, is decreased). Substances that increase the activity and effectiveness of GABA tend to decrease anxiety. The earliest substances that were discovered to have this effect were tranquilizers such as diazepam (Valium) and chlordiazepoxide (Librium). Thus tranquilizers are regularly used to treat anxiety conditions. Unfortunately, these medications tend to have a host of side effects, partly because GABA inhibits activity of many types of neurons, not just neurons involved in the occurrence of anxiety. GABA suppresses activity in much of the brain, producing memory loss, sleepiness, and slurred movement and speech.

One of four versions of the Edvard Munch masterpiece *The Scream*, painted in 1893. (AP/Wide World Photos)

Anxiety or fear are present in the anxiety disorders that are described by the American Psychiatric Association in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). The prominent feature of both generalized anxiety disorder and panic disorder is anxiety. The reaction in simple phobias (fears of specific objects or situations such as dogs, snakes, blood, closed spaces, etc.), however, is more accurately described as fear. Other major anxiety disorders, social phobias and posttraumatic stress disorder, involve both anxiety and fear. As researchers have learned more about anxiety and fear and the differences between the two, treatments for the various anxiety disorders have improved.

See also Anxiety Disorders Association of America, anxiolytic, fear, generalized anxiety disorder, neurotransmitter, panic disorder, phobia, posttraumatic stress disorder, sympathetic nervous system, Valium.

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- Anxiety disorders include panic disorder, obsessive-compulsive disorder, posttraumatic stress disorder, generalized anxiety disorder, and phobias (social phobia, agoraphobia, and specific phobia).
- Approximately 40 million American adults aged 18 and older, or about 18.1 percent of people in this age group, have an anxiety disorder in any given year.
- Anxiety disorders frequently co-occur with depressive or substance abuse disorders.
- Most people with one anxiety disorder also have another anxiety disorder. Nearly three-quarters of those with an anxiety disorder will have their first episode by age 21.

Source: http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america.shtml

Anxiety Disorders Association of America

The Anxiety Disorders Association of America (ADAA) is a U.S. nonprofit organization devoted to improving the lives of the people who suffer from anxiety disorders by increasing awareness and promoting early diagnosis, treatment, and cure. Clinicians, researchers, consumers, and others comprise the membership of ADAA.

ADAA was originally founded in 1980 as the Phobia Society of America. According to the ADAA Web site, at the time, the term *anxiety disorder* was not in use, and most anxiety disorders were called *phobias*; there were no research-based treatments. The formation of the organization was initiated when a group of individuals came together after they discovered that a particular form of psychotherapy, cognitive-behavioral therapy, was effective in treating people suffering from phobias. The organization changed its name in 1990 to the Anxiety Disorders Association of America to cover the broader range of anxiety disorders. The association now deals with widely recognized anxiety disorders such as specific phobias, social anxiety disorder (social phobia), panic disorder (panic attack), obsessive-compulsive disorder, posttraumatic stress disorder, and generalized anxiety disorder. Additionally, it appreciates the relationships between anxiety disorders and other conditions such as depression, bipolar disorder, sleep disorders, eating disorders, and alcohol abuse, all of which, if comorbid with (an) anxiety disorder(s), have an impact on the individual client's suffering and experience.

ADAA's organizational goals are intended to increase professional and public awareness of anxiety disorders and how they affect people's lives, reduce the stigma associated with anxiety disorders, promote the development of scientific knowledge about causes and treatment of anxiety disorders, and help people with anxiety disorders to find effective treatments and to learn self-help skills. A number of publications serve the purposes of increasing awareness, reducing stigma, and helping sufferers. For instance, ADAA offers free downloadable brochures and reports and a regular newsletter that is distributed through e-mail and sells books and calendars about anxiety disorders. Professionals within the association conduct research and treat anxiety disorders. To fund cutting-edge scientific research, a number of annual grants and awards are bestowed by the association to new researchers.

The organization is directed by its board of directors, scientific advisory board, and clinical advisory board. Individuals support ADAA through donations, while professionals support ADAA through dues and contributions and by voluntarily serving on committees and advisory boards. ADAA also has worked with other national health care organizations to achieve its objectives. By disseminating information, ADAA serves as the facilitator of the communication between people who need treatment and clinicians, researchers, and other health care professionals as well as educators who can provide the vital information.

See also anxiety, cognitive therapy and cognitive-behavioral therapy, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, phobia, posttraumatic stress disorder.

Further Reading:

Anxiety Disorders Association of America Web site: http://www.adaa.org/

Anxiolytic

Anxiolytics are medications used to reduce tension, relieve anxiety or irritability, and treat insomnia. Medications used in the treatment of anxiety disorders include selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs), high-potency benzodiazepines (e.g., Valium), monoamine oxidase inhibitors (MAOIs), other agents (e.g., barbiturates, meprobamate, sedative-hypnotics, antihistamines, and buspirone), and combination treatments (Patterson, 2006; Preston, O'Neal, & Talaga, 2008).

Humans (and other animals) have adaptive survival mechanisms that cause them to experience fear, which can help them avoid harmful situations. For example, when confronted with a threat (e.g., coming across a rattlesnake), the body may react with increased heart rate, sweating, and other fight-or-flight responses. This adrenaline response may increase one's ability to escape a dangerous situation. The ability to learn what situations may be dangerous allows individuals to avoid these situations in the future. However, when fear is out of proportion to actual threat (e.g., reacting with fear to any mention of snakes), anxiety may ensue. Avoidance learning consists of conditioned fear (an immediate response, including freezing behavior, a feeling of fear, or other reactions), which involves the brain's amygdala, followed by an avoidance response (i.e., such as running away), which involves other brain structures, including the basal ganglia, frontal cortex, and hippocampus

(LeDoux, 1996). Benzodiazepines enhance the effects of the neurotransmitter gamma-aminobutyric acid (GABA), an inhibitory chemical messenger that helps regulate excitability, ameliorating the conditioned fear response (LeDoux, 1996). Other anxiolytics influence the neurotransmitters serotonin and norepinephrine, which are also involved in anxiety (Patterson, 2006).

The first benzodiazepine—chlordiazepoxide (Librium)—was developed in 1957. Benzodiazepines were a significant improvement over previous anxiety medications, which included barbiturates, meprobamate (Miltown), tybamate (Solacen, Tybatram), glutethimide (Doriden), methyprylon (Noludar), and ethchlorvynol (Placidyl; Preston et al., 2008). Many of these earlier tranquilizers have high abuse potential; they can cause tolerance and severe withdrawal symptoms. The late Chief Justice William Rehnquist used Placidyl for insomnia and back pain from 1972 through 1981, when he was hospitalized for his back pain. He experienced severe withdrawal, including delusions, and had to be tapered off the drug over a period of several months (Mauro, 2007).

Benzodiazepines have both sedative and hypnotic properties. Medications with sedative properties are used to treat anxiety; hypnotics are used in the treatment of insomnia (to induce or maintain sleep). Benzodiazepines are also used as anesthetics or to aid in withdrawal from other drugs; they are fast acting and effective against anxiety. Side effects may include sedation, slurred speech, lack of coordination, and lessening of inhibitions. Some benzodiazepines (triazolam, midazolam, and lorazepam) can cause anterograde amnesia, resulting in memory loss for a period of time after the drug has worn off (Preston et al., 2008). Different benzodiazepines have varying degrees of abuse potential, physiological dependence, and withdrawal symptoms. It can be dangerous to combine benzodiazepines with alcohol; this combination is what caused Karen Ann Quinlan's coma (Preston et al., 2008). Because many people have anxiety or insomnia, benzodiazepines have been widely used. Valium, which was introduced in 1963, became one of the best-selling pharmaceutical drugs on the market, reaching peak sales in the United States in 1978 (Bakalar, 2005). In addition to Valium and Librium, some of the better known benzodiazepines include Xanax, Klonopin, Rohypnol, Dalmane, lorazepam (Ativan), midazolam (Versed), Restoril, and Halcion. Some of the newer atypical benzodiazepines (e.g., ProSom, quazepam) and nonbenzodiazepines (e.g., Ambien, Lunesta, Sonata) are used as hypnotics; they may be associated with less cognitive impairment, daytime fatigue, and a reduced risk of dependency (Preston et al., 2008). Benzodiazepines should not be used during pregnancy or while nursing (Preston et al., 2008).

Buspirone (BuSpar) a partial serotonin receptor (HT-1A) agonist, has anxiolytic effects and is also used as an augmentative treatment for depression. It has low potential for dependence or tolerance and fewer side effects than benzodiazepines; side effects include nausea, dizziness, and anxiety (Preston et al., 2008). A disadvantage of buspirone is its delayed onset of action—between one and two weeks before therapeutic benefits are experienced. It is not effective for everyone, especially people who have previously used benzodiazepines.

Some antihistamines (e.g., hydroxyzine, Benadryl) are used to treat anxiety. They cause sedation (and reduce anxiety) by blocking [illegible] receptors in the central nervous system. They work quickly (within 30 m[illegible]es) and last four hours.

They are not habit forming, but they can cause drowsiness, which can make it difficult to gauge the correct therapeutic dose that will reduce anxiety without causing sedation (Preston et al., 2008). Beta blockers and clonidine are typically used to treat high blood pressure but are also effective in the treatment of some anxiety disorders. Beta blockers (e.g., atenolol, Inderal) act by blocking the effects of norepinephrine: they reduce the physical manifestations of anxiety (sweating, increased heart rate, tremor). Thus they are more effective treating periodic anxiety, such as performance anxiety, than ongoing social or generalized anxiety disorder. Side effects of beta blockers can include dizziness, low blood pressure, and depression. Clonidine (Catapres) is an alpha-2 adrenergic agonist that inhibits the release of norepinephrine. In addition to anxiety, it is also used to treat opiate withdrawal. Tiagabine (Gabitril) is a selective GABA reuptake inhibitor used as an anticonvulsant and to treat anxiety. Research has explored tiagabine's effectiveness in the treatment of panic disorder and posttraumatic stress disorder, but more research is needed to demonstrate its efficacy (Preston et al., 2008). Some of the antidepressants are used in the treatment of anxiety. Examples include the TCA opipramol (Neuraxpharm, Insidon); the MAOI phenelzine (Nardil); SSRIs Lexapro, Luvox, Paxil, and Zoloft; serotonin-norepinephrine reuptake inhibitors (SNRI) nefazodone (Serzone) and venlafaxine (Effexor); the reversible inhibitor of monoamine oxidase A (RIMA) brofaromine (Consonar); and noradrenergic and specific serotonergic antidepressant (NaSSA) mirtazapine (Remeron).

Alternative treatments used for anxiety include various herbs and medicinal plants. There is limited reliable evidence of efficacy in the treatment of anxiety with alternative treatments such as coastal water hyssop (*Bacopa monnieri*), kava kava (*Piper methysticum*), lavender (*Lavandula angustifolia*), ashwagandha (*Withania somnifera*; a plant in the nightshade family), passionflower (*Passiflora incarnata* and *P. edulis*), St. John's wort (*Hypericum perforatum*), valerian root (*Valeriana officinalis*), and marijuana (*Cannabis sativa*). For more information about risks and benefits associated with alternative treatments, visit the National Center for Complementary and Alternative Medicine Web site.

See also anxiety, benzodiazepine, beta blockers, complementary and alternative medicine, neurotransmitter, Valium.

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Appraisal

According to a number of emotion scholars, cognitive appraisal is crucial to the experience of an emotion. Appraisal is an interpretation of a situation and an evaluation of its implication for one's well-being. American psychologist Magda Arnold clearly articulated the appraisal concept in her 1960 book *Emotion and Personality*. Following the publication of her book, the discussion of appraisal among scholars intensified, and this discussion led to further development of the concept.

According to Arnold, when a situation occurs, people immediately assess the situation as either potentially harmful or potentially beneficial. In her theory, this appraisal process occurs unconsciously and results in a "felt tendency" toward those stimuli/situations that are appraised as good and away from those that are appraised as bad. The felt tendency is an emotional feeling that is experienced consciously.

In 1893, American psychologist William James (James-Lange theory) had asserted much of what Arnold said, in particular, stating that there is an early, unconscious assessment of a situation as good or bad. According to James, through some intervening processes, a conscious, subjective feeling results. The James-Lange theory focused more on the relationship between physiological response of the body and emotional feeling, rather than the relationship between cognition (appraisal) and feeling, which Magda emphasized.

A number of emotion researchers, including American psychologist Richard Lazarus, adopted the appraisal concept. Lazarus applied appraisal to his stress and coping theory, as discussed in his 1966 book *Psychological Stress and the Coping Process*. Lazarus modified Arnold's concept, emphasizing that appraisals can be either unconscious or conscious. He and his colleagues conducted a number of studies that showed that appraisals can play a causal role in emotional feelings. For instance, in one study (Speisman, Lazarus, Mordkoff, & Davison, 1964), research participants watched a graphic film episode of a circumcision ritual among teenage aboriginal boys in Australia. Participants were assigned to one of three research conditions. One group, while watching the film, listened to a sound track that emphasized in detail the gruesome aspects of the circumcision, while the second and third groups heard voice-overs that either intellectualized or minimized the circumcision. Lazarus measured autonomic nervous system (ANS) responses in all groups and found that those in the first group had stronger ANS responses than the first group, indicating greater stress. Lazarus argued that the different sound tracks caused participants to have different appraisals about the situation, and the different appraisals produced different feelings.

Appraisal theory remains a leading theory in the understanding of the emotion process. However, some scholars have identified what they perceive as weaknesses or limitations of the theory. For instance, Kalat and Shiota (2007) point out that cognition can certainly occur after an emotional feeling rather than the other way around. For example, sometimes people have sudden angry outbursts, perhaps yelling at a person in an impulsive manner. In this case, the person may not have known exactly why he yelled and may have to come up with a reason (perhaps a rationalization) later, for example, he yelled at the person because the person is always self-centered (and he was reminded of that in the moment). In sum, Kalat and Shiota suggest that the basic identification of good or bad usually occurs quickly,

usually followed by an emotional feeling, but in some situations the emotional feeling may come first. Additionally, some (e.g., LeDoux, 1996) argue that the appraisal theories are accurate in many ways but fall short because they have led to a bias in the field: too much emphasis on cognition as an explanation for emotion.

See also Magda Arnold, Cannon-Bard theory of emotion, James-Lange theory of emotion, subjective experience of emotion.

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Aprosodia

Aprosodia (sometimes referred to as *aprosody*) is a disorder of affective (emotional) language and behavior. *Linguistic* (intrinsic) prosody refers to the pitch, stress, duration, and changes in frequency, intensity, and timing of speech. Linguistic prosody is thought to be primarily related to mechanisms in the left hemisphere of the brain. *Emotional* (*affective*, *extrinsic*) prosody refers to the inflection and tone in language and the use of gestures and other nonverbal signals (such as body language) to communicate emotion and feeling. Usually resulting from lesions in the right hemisphere of the brain, people with *expressive* emotional aprosodia are unable to endow their language with emotion and feeling and tend to speak in a flat, unemotional voice. People with *receptive* emotional aprosodia cannot interpret the emotional intent (emotionally intoned speech or nonverbal communication) of others.

One individual can have expressive aprosodia, receptive aprosodia, or both types. Affective aprosodia is often associated with autistic spectrum disorders and schizophrenia. Traumatic brain injury or acquired brain injury such as Parkinson's disease, Alzheimer's disease, or a stroke that damages the right hemisphere of the brain may result in expressive aprosodia—an inability to change the voice to express emotions such as anger, sadness, or joy. Expressive aprosodia can cause miscommunication with family and friends and adversely affect an individual's ability to function in many of life's interpersonal arenas, including jobs that emphasize interpersonal communication (such as sales or counseling).

Aprosodia may exist comorbidly with other disorders in some individuals. Both aprosodia and alexithymia are disorders of affective language and behavior. Alexithymia is a cognitive-affective disturbance involving difficulty in recognizing and describing feelings and emotional states. People with alexithymia have a diminished inner fantasy life and constricted emotional activity sometimes exhibited in a rigid posture and lack of expressive facial movements. Some research suggests a possible common neurophysiological mechanism for both aprosodia and alexithymia. Aprosodia due to right hemisphere damage is often accompanied by anosognosia, a pathological denial of impairment, making treatment much more difficult.

There are limited measurement tools and diagnostic tests to assess aprosodia. It is difficult to evaluate receptive prosody because so much interpretation of language and emotional intent is subjective. Likewise, it is difficult to evaluate expressive prosody because judgment of facial expression and body language can be influenced by many factors (including family and cultural norms) and is subject to interpretation. Tools that aid in the assessment of aprosodia include the Facial Expression Coding System developed in 1991 (FACES; Kring & Sloan, 2007), the Florida Affect Battery (FAB; Bowers, Blonder, & Heilman, 1991), the Affective Communication Test (ACT-10; Friedman, Prince, Riggio, & DiMatteo, 1980), and the Emotion Facial Action Coding System (EMFACS; Ekman & Friesen, 1978).

Cognitive-linguistic and imitative interventions have been effective in treating expressive aprosodia resulting from acquired brain injury in a small sample study (Rosenbek et al., 2004; Rosenbek et al., 2006). Other treatments that have been explored for expressive aprosodia include a prosody repetition strategy, cognitive-linguistic self-cuing, facial expression cross-cuing (Anderson, Beversdorf, Heilman, & Gonzalez Rothi, 1999), and pitch biofeedback combined with expression modeling (Stringer, 1996). However, because most treatments have been explored with single-case and small-sample studies, more research is needed to develop effective treatments for expressive aprosodia. Nonverbal communication skills training—including training in affect recognition and role-playing with feedback about vocal and nonverbal aspects of communication—is often incorporated into treatment programs for schizophrenia and autistic spectrum disorders.

See also autistic spectrum disorders, Parkinson's disease, prosody, schizophrenia, traumatic brain injury.

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Aristotle (384–322 BC)

Aristotle, Plato's most distinguished pupil, was born in a well-to-do Greek household, the son of a physician to the king of Macedonia. He married twice, his first wife having died at a young age, and was a loving spouse and provider in the two marriages. He had a thirst for knowledge beginning from an early age. At age 17, he visited Plato's Academy in Athens, which resulted in his studying there for 20 years. When Plato died, his nephew became the successor, and Aristotle left the Academy, perhaps because he had expected to become the new head. For the next 13 years, he took positions in various areas of the Mediterranean, then returned to Athens at age 49 and founded a school, the Lyceum.

The Lyceum became a center of scientific thinking. Its teachers espoused philosophical views that opposed the positions presented at the Academy. Although Aristotle had admired his distinguished mentor, Plato, he possessed a fundamental life view that contrasted sharply with Plato's. Aristotle was a realist who believed that knowledge is derived from the senses, from observation. Even in his youth, Aristotle's intellectual bent had been expressed through studying the behavior of animals and humans, collecting biological organisms, observing the stars, and other real-life, tangible pursuits, in addition to reading and writing. While many Greek thinkers, including Socrates and Plato, believed that the soul exists apart from the body and that the soul is born with knowledge, Aristotle's view was that the soul and body are intertwined; when the body dies, so does the soul. Aristotle therefore did not believe in an immortal soul that is born with knowledge and deemphasized introspection as a source of knowledge.

With his emphasis on observation as the source of knowledge, Aristotle is the ancient Greek thinker who contributed the most to the advancement of the scientific worldview. The Lyceum, like the Academy, was closed in AD 529 because it was viewed as a pagan school.

Aristotle wrote prolifically; about 30 of his works survive. Each work is a single book or collection of books on a particular topic such as *Physics*, *On the Soul*, *On Memory and Recollection*, *On Dreams*, and *History of Animals*. In his 10-book work *Nicomachean Ethics*, Aristotle had much to say about emotion, especially happiness. He begins by stating the thesis that true happiness requires virtue. Humans seek wholeness, and the moral and intellectual virtues are the means to achieve this. He identifies 12 moral virtues: courage, self-control, generosity, magnificence, greatness of soul, ambition, gentleness, friendliness, truthfulness, wittiness, shame, and justice. The five intellectual virtues are art, science, practical judgment, theoretical wisdom, and intelligence. His theory is a holistic approach to virtue; it involves the interdependence of the virtues. If an individual possesses only one virtue, it is a vice. Possessing one virtue conflicts with his virtuous principle of moderation in all things, which he called the 'Golden Mean.' For example, an individual is courageous

but not virtuous in other ways, the courage may be expressed in the extreme, in recklessness, because courage is not tempered by the other virtues (such as gentleness or friendliness).

The master virtue that guides all other virtues is the intellectual one, practical judgment, which he called *phronesis*. *Phronesis* is a type of wisdom, the knowledge of what is good for people in a particular context (a sort of street smarts). Without it, individuals can be morally virtuous, but like children, they do not know how to use their virtue for the greater good. Possession of *phronesis* means that the individual also has all other virtues. In sum, in the Aristotelian view, happiness depends on being virtuous. A person can be temporarily happy from experiencing pleasure, virtuous or not. But the person who primarily seeks pleasure, but who is not virtuous, is simply a fool. A modern movement in psychology called *positive psychology* is concerned with this issue of true happiness. Positive psychologists refer to classical thought on happiness, including the ideas expressed by Aristotle.

After teaching and researching for 13 years at the Lyceum, Aristotle left Athens because of a growing anti-Macedonian sentiment. He was concerned that some harm may befall him because of his connection to the king of Macedonia. Aristotle died a year later, in 322, at age 62 or 63.

See also Plato, positive psychology.

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Magda Arnold (1903–2002)

Emotion researcher and theorist Magda Arnold is best known for her book *Emotion and Personality*, published in 1960, which integrated psychological, physiological, and neurological perspectives on emotion and elaborated on emotional appraisal, the idea that emotional feelings result from cognitions—automatic evaluations of stimuli as basically good or bad. Arnold also organized an international emotion conference in the 1960s that stimulated the development of research and theorizing about emotion.

Arnold was born in 1902 in Moravia, now the Czech Republic, the daughter of two theater people who traveled extensively. She was raised by two women who admired her mother. Arnold married Robert Arnold, a PhD in Slavic languages, and they lived in Prague for about two years before immigrating to Toronto, Canada, in the late 1920s. Arnold began to study psychology at the University of Toronto in 1935, while also raising three daughters. She earned a bachelor's degree in 1939 then began graduate study in psychology. Her husband did not support her choice to pursue a graduate degree and moved outside of Toronto, taking their daughters with him. The couple remained separated; Magda had relatively little contact with her daughters, and her life was largely devoted to her academic work. She was awarded a PhD in psychology in 1942 and immediately began work as a lecturer at the University of Toronto. In 1946, when men returned from World War II, she lost her lecturer job and was hired as director of research and training in the

Psychological Services of the Canadian Veteran Affairs Department, working there for about a year.

In 1947, Arnold moved to the United States. After having brief positions at two other universities, she was hired as an associate professor at Bryn Mawr College in Pennsylvania. In 1948, Arnold participated in a highly significant and successful symposium on emotions called the Mooseheart Symposium on Feelings and Emotions, the largest symposium on emotions at the time. Presenters represented the United States, Canada, and Europe from diverse disciplines, including psychology, anthropology, psychiatry, biochemistry, neurology, and others. Forty-eight papers were presented, three by women: Arnold, Margaret Mead, and Anne Roe. Twenty years later, in 1968, Arnold organized the next conference on emotion that was based on the Mooseheart conference; it was held at Loyola University in Chicago. According to Shields (2006), Arnold's symposium was a notable development in the history of the study of emotion; the symposium was both a sign of and contributor to a resurgence of interest in emotion as an academic topic.

While at Bryn Mawr, Arnold developed a renewed commitment to her Roman Catholic faith, the faith that she had been raised with as a child. Her new dedication was passionate enough that it began to affect her career decisions (Shields, 2006). In 1950, she left her job at Bryn Mawr College to take an associate professorship at Barat College, a Catholic college in Lake Forest, Illinois. This decision was to some extent a sacrifice; Arnold had greatly enjoyed the intellectual atmosphere at Bryn Mawr with both students and colleagues, had better resources at Bryn Mawr (higher salary, better facilities), and found the students at Barat College somewhat disappointing. Soon she realized that Barat College was not workable for her and was hired at Loyola University in Chicago in 1952. Over the next eight years, she worked on a book that was important in the history of emotion research, *Emotion and Personality*, which was published in 1960. In her book, she achieved (1) an integration of psychological, physiological, and neurological approaches to emotion; (2) a clear description and elaboration of the appraisal theory of emotion, which held that emotional feelings are the result of automatic cognitions that occur rapidly in response to stimuli; (3) a review of the research and theory on emotion to date; and (4) an examination of the relationship between emotion and motivation.

Arnold retired from Loyola in 1972, moving to Spring Hill College in Mobile, Alabama. She began work on a second book, *Memory and the Brain*, which was published in 1984. In the 1980s, Arnold moved to Tucson, Arizona, near one of her daughters. She continued to publish, although slowly, and was active in the Catholic church. During her lifetime she was awarded two honorary doctorates: one from St. Mary's College in Moraga, California, and one from Loyola University. She died on October 2, 2002, at age 98.

See also appraisal.

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Art Therapy

Art therapy has been used historically both as a diagnostic technique and as a therapeutic tool. It has been employed in a variety of settings (schools, hospitals, institutions, private practice) with many different client populations and can be done individually or with groups. Art therapy has been utilized in the treatment of people with Asperger's syndrome, behavioral problems/interpersonal conflicts, depression or anxiety, substance abuse, and with victims of trauma or those dealing with divorce or domestic violence. V. B. Lusebrink (1988) describes art therapy as an expressive therapy that can tap into cognitive, perceptual, and kinesthetic levels. This expressive therapy can form a bridge between an individual's inner and outer realities, help promote insight and inner growth, and provide a means for solving problems, resolving conflicts, promoting positive social interaction, and developing coping strategies.

Art therapy developed simultaneously in England and the United States. In England, Marion Richardson promoted the idea of children expressing themselves spontaneously in art classes; these ideas became widespread throughout the 1940s (Liebmann, 2004). Edith Kramer is recognized as a pioneer who developed art therapy in educational settings in New York. Kramer's work with children utilized a unique approach that incorporated kinesthetic and tactile modalities with more traditional creative expression. Margaret Naumberg, a psychotherapist and educator in New York in the 1940s, developed art therapy in the United States. Florence Cane modified art education techniques for use with children. Modern art therapists draw on techniques from shamanic cultures as well as the theories of Freud and Jung. Art therapists design techniques using a developmental perspective. Both directive and nondirective approaches can be used.

Cella Yuen, left, whose husband Elkin, was killed in the September 11, 2001 World Trade Center attacks, works with art therapist Bettina Boccaccio to create a quilt patch in memory of her husband at the WTC Family Center, 2004. (AP/Wide World Photos)

A group art therapy program can help foster a positive sense of community. While art therapy has its own goals and approaches, art therapy programs can incorporate techniques from other counseling theory bases (e.g., Rogerian person-centered or Adlerian). In art therapy sessions, the therapist's aim is to develop a safe atmosphere where clients will feel comfortable to participate in new experiences and explore their thoughts and emotions. The therapist provides some teaching of the basic art methods but acts more as a facilitator than as an instructor. The counseling role is to be genuine and to demonstrate caring, respect, tolerance, and empathy while guiding clients in their exploration. Through this approach, clients are meant to develop recognition for and ability to utilize their strengths (Corey, 2008).

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Artistic Expression of Emotion

Producing art is a way of expressing oneself and of communicating one's emotions and other inner experiences to one's fellows. One can express oneself artistically in diverse ways—musically, through dance, through writing, graphically, in painting, sculpture, cave drawing, and so forth. Artistic expression may occur because a person has become so taken with her passionate feeling that she is strongly compelled to produce something that others can see, something that in many cases is a product that maintains some permanence. Expressing one's emotion via art may occur when an individual feels that she cannot express the emotion in other ways; simply having a conversation with others does not convey the emotion, or perhaps the individual does not even know the full depth of the emotion; part of the emotion is experienced below consciousness.

Canadian psychologist Keith Oatley (Oatley, 2003; Oatley, Keltner, & Jenkins, 2006) has discussed the function of expressing emotions in art. Oatley's *romantic hypothesis* maintains that expressing emotions through art leads an individual to more fully and deeply understand her emotions and their subtleties. The romantic hypothesis encompasses four components, each of which has been supported to some extent by research or other theory. The first is that at least some of our emotions are difficult for us to understand. This difficulty in comprehending is what creates the desire to express our emotions artistically. According to diary research conducted by Oatley and Duncan (1992), research participants who were asked to record everyday emotional experiences reported that they did not understand at least some aspect of 5 to 25 percent of their emotional experiences (percentage varied depending on the particular sample that was studi

A second proposition of the romantic hypothesis is that emotions stimulate creativity. It is those emotions that are related to having come across a problem that is difficult to solve or having encountered an unexpected change (a "wrench in the works") or having an unmet expectation that tends to lead to creative expression. In American psychologist Mihaly Csikszentmihalyi's (1996) book on creativity, he reports on his and his students' interviews with 91 creative people, many of whom were artists. One of the common threads in people's reports was that their creative work was inspired, at least in part, by emotional experience.

A third component of the romantic hypothesis is that the artistic product will frequently take on the character of the emotion that the person who produced it was experiencing. So, for example, if you were feeling love and serenity while producing the art, these feelings will be conveyed in the art. If one is angry, the art will seem to have an angry quality.

The fourth aspect is that consumers of art should be able to read the emotion in art fairly easily. In one study, Kreitler and Kreitler (1972) observed 15 people as they viewed six sculptures of figures. They made observations and ratings of the people's postures and body movements and found that 84 percent of people imitated the postures of the sculptures as they were looking at them. Additionally, Juslin and Laukka (2003) reported that research participants can regularly identify the emotion that a musical performer is trying to convey even when the musical performance involves no words.

Nearly everyone has expressed her emotions through art at some point in her lifetime, and many use artistic production as a regular form of emotional expression. Oatley has offered a well-developed explanation of what motivates us to express emotions artistically.

See also art therapy, flow.

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Assertiveness Training

In his 1949 book *Conditioned Reflex Therapy*, Andrew Salter identified a personal characteristic that is now referred to frequently in [illegible] mental health fields and in popular culture: assertiveness. Assertiveness is [illegible] act of standing up for oneself

in a way that does not violate the rights of others. (Asserting one's rights without considering others' rights is called *aggression*.) In the decades that followed the publication of Salter's book, researchers including Arnold Lazarus (1966) argued that most people are capable of assertiveness in some areas of their lives but are passive and ineffective in others. Fortunately, these researchers proposed, assertiveness can be learned. Therefore assertiveness training was created.

Assertiveness training involves at least eight main areas (Davis, Eshelman, & McKay, 2008). First, an individual is taught to identify the differences between passive, aggressive, and assertive behaviors through considering real-life examples of these types of behaviors. Second, the person specifies types of situations in which she would like to be more assertive. Bower and Bower (2004) have written a questionnaire designed for this purpose. Third, the individual describes specific problem situations *in detail.* The detail involves noting the specific person who is a "target" for assertiveness (*who*), the circumstances when the problem is most likely to arise (*when*), what bothers the individual (*what*), how the individual acts when being nonassertive (*how*), any fears that occur when anticipating assertive behavior (*fears*), and a specific goal for the situation (*goal*). Three or four situations should be considered. When imagining them, the person should try to do so vividly, making note of feelings and thoughts that arise as the script unfolds. The individual is likely to discover some negative thoughts or emotions—anxieties, self-defeating thoughts, embarrassment, feelings of low self-esteem, and so on. The fourth step is to write out a script for change (and later, additional scripts for change). The script is a plan for dealing with the problem in an assertive fashion. Once the script is complete, the individual is instructed to practice, either alone, or if possible, with a friend.

Other areas of assertiveness training described by Davis et al. (2008) are practicing assertive body language, learning how to listen, learning how to compromise assertively, and avoiding manipulation. Davis et al. (2008) provide excellent, detailed how-to instructions for all eight areas, and Bower and Bower (2004) discuss these areas and other techniques in addition.

Becoming assertive is beneficial in many ways. Perhaps most obvious, one is more likely to get what he wants. But also, the assertive person can express his feelings, thoughts, and opinions openly, can disagree with others without fear, can accept compliments with comfort and grace, can talk about himself without worry of boring others or disturbing them in other ways, and can say no. In short, assertiveness means a more effective and gratifying way of interacting with others. Research has demonstrated that assertiveness training can be helpful in reducing negative emotions or negative behaviors, including anger (Watts & Courtois, 1981) and depression (Reinecke & Ginsburg, 2008), and may help decrease alcohol abuse (Watson & Maisto, 1983).

See also aggression.

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Association for Play Therapy

The Association for Play Therapy (APT) is a national professional society advancing the usefulness of play, play therapy, and credentialed play therapists. Incorporated as a nonprofit California corporation, APT's headquarter offices are located in Clovis, California. On its Web site, APT defines play therapy as "a developmentally sensitive therapeutic modality in which a trained play therapist uses the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development." Play therapy employs the power of play to communicate and interact, aiming to improve the psychological development and mental health of people, especially children. Play therapy is also used as a tool for diagnosis, helping to identify the cause or causes of disturbed behavior. As a diagnostic tool, play therapists observe a client playing with toys such as playhouses and dolls, also making note of the client's willingness to interact with the therapist.

APT is involved in promoting and supporting play therapy in a variety of ways. APT sponsors research play therapy, grounding the treatment modality in an empirical base. APT also sponsors and supports education and training of play therapists through its continuing education and credentialing programs. APT promotes and supports various programs, services, and other activities to increase public understanding and appreciation of play and play therapy

APT funds its programs and operations from dues paid by its members and fees paid by members and nonmembers through conferences, credentialing, and other programs. The APT's publications and Web site are funded by membership dues and advertising fees. For the purpose of disseminating important findings of research that demonstrate the value and effectiveness of play and play therapy, APT, in conjunction with the American Psychological Association, publishes the *International Journal of Play Therapy*. APT also produces brochures to educate the public and other mental health professionals about play therapy and APT such as "Why Play Therapy" and "Join APT Now." Members of APT receive the quarterly magazine *Play Therapy*, presenting the latest information regarding play therapy and

APT. As of 2008, APT had over 5,600 members and anticipated an increase in its numbers owing to members' introducing play therapy to others and to the opportunities to access critical research and training that the organization provides. Members are encouraged to participate in the operation of APT by completing questionnaires about how their professional environment can be improved and to measure customer satisfaction.

See also play therapy.

Further Reading:
Association for Play Therapy Web site: http://www.a4pt.org/

Association for Psychological Science

The Association for Psychological Science (APS) is a nonprofit organization dedicated to the advancement of scientific psychology and its representation at the national and international level. According to its mission statement, it aims "to promote, protect, and advance the interests of scientifically oriented psychology in research, application, teaching, and the improvement of human welfare."

The organization was founded in 1988 as the American Psychological Society. It grew quickly, with over 5,000 members in its first six months. Twenty years later, there were over 20,000 members consisting of psychologists from the United States and abroad, with specialties spanning the spectrum from scientific, applied, and teaching psychology. APS changed its name to the Association for Psychological Science in 2006.

In 1990, APS organized the first Behavioral Science Research Summit, at which representatives of almost 70 organizations developed a framework for a national behavioral sciences research agenda, which became encapsulated in the Human Capital Initiative. As part of its effort to represent psychological science nationally, APS has fostered relationships with the National Institutes of Health (NIH) and the National Science Foundation. APS supported the creation of the Office of Behavioral and Social Science Research at the NIH in 1993.

To further one of its primary goals of disseminating psychological research, in 1989 APS launched its first journal, *Psychological Science.* APS publishes three other journals, including *Current Directions in Psychological Science*, *Psychological Science in the Public Interest*, and *Perspectives on Psychological Science.* APS publishes several books about psychology.

Further Reading:
Association for Psychological Science Web site: http://www.psychologicalscience.org/

Ataraxia

Ataraxia, from the Greek *ataraktos* (untroubled), refers to a state of calm, tranquility, serenity, freedom from anxiety, or freedom from fear (Colman, 2001). The philosopher Epicurus (341–270 BC) claimed that pleasure was the ultimate good. But unlike the hedonism of Aristippus and the Cyrenaics, which emphasized indulgence and the pursuit of bodily pleasures, Epicurus defined pleasure as a state of serenity (*ataraxia*) and absence of pain (*aponia*).

In psychology, ataraxia can also be used to describe a difficulty connecting one's behavior with the emotional consequences of that behavior. For example, a typical child, when considering whether to clean her room, would probably understand that if she did not clean her room, she would not be allowed to play with her friends, and if she did not play with her friends, she might be lonely. An ataraxic child might be able to understand the concept but would not be able to connect the feelings of loneliness to the behavior of not cleaning her room. While ataraxia is not in itself a mental disorder, an ataraxic state can be associated with disorders such as dementia and attention-deficit hyperactivity disorder. Ataraxia can result in a lack of motivation and difficulty forming and maintaining stable relationships.

Ataraxic (or ataractic) drugs, a term used most often in the mid-20th century, referred to drugs that had a sedating or calming effect on the central nervous system. This could include sedative, tranquilizing, or antianxiety drugs.

See also The Epicureans.

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Attachment

Attachment is the emotional bond between infant and caregiver (mother, father, or other who takes care of the baby). Attachment is also expressed behaviorally; infant and caregiver wish to be in close proximity to one another. John Bowlby, a British psychiatrist who was trained in Freudian psychoanalysis, wrote a groundbreaking text that explored attachment (Bowlby, 1969). In his book, Bowlby argued that attachment between infant and caretaker is innate and that it serves to enhance the survival of the infant. Because of this bond, the mother wishes to care for the infant. The infant's wish to remain close to the mother also enhances the possibility of survival. Bowlby also wrote that the relationship between infant and caregiver is the infant's first experience with both interpersonal love and interpersonal fear. The pull of attachment continues throughout life, although possibly not as dramatically as the early experience. This early relationship sets the emotional stage for later relationships, especially romantic love.

Contemporaneous with Bowlby, psychologist Mary Ainsworth pioneered the assessment of individual differences in attachment and the study of how infant attachment is related to one's later love relationship patterns (Ainsworth, 1967, 1969, 1989). Through using the Strange Situation method, Ainsworth brought mother and infant into a laboratory playroom filled with toys. A researcher greeted them and then moved to a corner of the room to sit quietly. Under this circumstance, most babies crawl off to play with the toys. Next, the test begins. The mother leaves, and the baby is left alone with the stranger. Ainsworth was interested in how the baby would react to the mother leaving and how the baby would behave when the mother returned.

Ainsworth identified three basic attachment patterns. In *anxious-ambivalent* attachment, the infant is very upset when mother leaves. When the mother returns, the infant tends to behave in an ambivalent fashion, demonstrating both love and anger (e.g., clinging to mother and lightly hitting her with fists). The infant whose attachment is *avoidant* does not appear distressed when mother leaves. When mother returns, the infant generally ignores her. In the most common type of attachment, *secure*, the infant responds with some distress when mother leaves but usually less distress than the anxious-ambivalent infant demonstrates. When mother returns, the infant greets her happily and all returns to normal.

Attachment remains a popular topic of study. Research that followed Ainsworth's has focused on a variety of topics. One area of interest has been adult relationship patterns that are associated with the infant attachment patterns. For example, research has tended to indicate that the securely attached infant is secure in adult romantic relationships. In contrast, individuals with either insecure attachment pattern (either anxious-ambivalent or avoidant) as an infant tend to have less secure and stable adult relationships. Another area of research has been to explore the reasons why some infants demonstrate the attachment patterns that they have. For example, Ainsworth et al. (1978) found that the mother's sensitivity to her baby's cues is related to the baby's attachment pattern. A number of books about attachment are informative and accessible to both popular and scholarly audiences, including Rolfe's (2005) *Rethinking Attachment for Early Childhood Practice.*

See also Mary D. Salter Ainsworth, John Bowlby.

Further Reading:

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Attitude

An attitude is a belief or opinion about an object that may predispose an individual to act in certain ways. We have attitudes about many things—politics, religion, morality, other people, cats, dogs, different countries—the list is almost endless.

An attitude has three components: the affective, the behavioral, and the cognitive. The affective component is the person's emotions toward the object, especially positive or negative evaluations. The cognitive component is what the person thinks about the object, including knowledge and beliefs. The behavioral component is the predisposition to act.

Attitudes are related to behavior but do not always predict behavior. Put another way, people do not always behave in ways that they believe they would based on their attitudes. Richard LaPiere (1934) conducted a classic study that demonstrated the possible disconnect between attitudes and behavior. In the 1930s, LaPiere traveled throughout the United States with a Chinese couple. He expected that he and his companions would be banned from restaurants and hotels because of the prejudice that many Americans had against Asians at that time. However, his prediction turned out to be incorrect: out of 251 establishments, only 1 denied service to him and his companions. When they returned home, LaPiere wrote letters to all 251 restaurants and hotels, asking the proprietors if they would provide food or lodging to Asians. About half responded. Among them, 90 percent said that they would not serve Asians in their establishments. With this naturalistic study, LaPiere effectively demonstrated the minimal relationship that sometimes exists between attitudes and behavior.

As a number of researchers have argued or shown in research (e.g., Minard, 1952), in addition to attitudes, situational factors influence behavior. The presence of situational factors can at least partly explain why attitudes do not always do a good job of predicting behavior. For instance, in LaPiere's study, his Asian companions were well dressed, carrying expensive luggage. Perhaps if they had appeared less wealthy or had been by themselves, rather than traveling with a Caucasian man, they would have been treated more poorly.

As mentioned earlier, attitudes can influence behavior (although not always as much as we would think). Additional research shows that one's own behavior can also influence one's own attitudes (e.g., Reiss, Kalle, & Tedeschi, 1981). Some researchers and theorists explain how this can occur (e.g., Schauss, Chase, & Hawkins, 1997). One explanation for behavior influencing attitudes is that people are motivated to experience consistency in their own minds, feeling tension (cognitive dissonance) from a lack of consistency, and therefore may change attitudes to conform with behavior. A second explanation is that in many cases, people have not engaged in much introspection about their attitudes toward a particular object and therefore infer their attitudes from their behavior.

See also cognitive dissonance.

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Atypical Antidepressants

The first antidepressants, developed in the 195[illegible] were the monoamine oxidase inhibitors (MAOIs, e.g., Marplan, selegiline), [illegible]ed [illegible] (TCAs, e.g.

imipramine, Elavil) and tetracyclic antidepressants (e.g., Serzone, Trazodone) in the 1960s. The selective serotonin reuptake inhibitors (SSRIs, e.g., Prozac, Paxil, Zoloft), also referred to as second-generation antidepressants, were developed next; they became available in the 1980s. SSRIs were followed by the atypical (or novel) antidepressants. Many of the atypical antidepressants affect the activity of one or more neurotransmitters (e.g., serotonin, norepinephrine, and dopamine). These neurotransmitters are chemical messengers involved in communication between neurons in the brain. Atypical antidepressants encompass variants of SSRIs such as serotonin and norepinephrine reuptake inhibitors (SNRIs, e.g., Effexor) and norepinephrine reuptake inhibitors (NRIs, e.g., maprotiline, reboxetine). Other atypicals include selective serotonin reuptake enhancers (SSREs, e.g., tianeptine), noradrenergic and specific serotonergic antidepressants (NaSSAs, e.g., Remeron), muscarinic antagonists (e.g., dibenzepin), reversible inhibitors of monoamine oxidase A (RIMAs, e.g., Aurorix), dopamine reuptake inhibitors (DARIs, e.g., amineptine), and norepinephrine-dopamine reuptake inhibitors (NDRIs, e.g., bupropion or Wellbutrin).

Atypical antidepressants are used to treat mild to severe depression, anxiety (including generalized anxiety, social anxiety, panic disorder, posttraumatic stress disorder), and chronic pain. Common side effects of atypical antidepressants include anxiety, sedation, insomnia, nausea, and sexual dysfunction (Preston, O'Neal, & Talaga, 2008). Side effects of NaSSAs (e.g., mirtazapine) include sedation, dry mouth, and weight gain, making them particularly useful for geriatric patients, who may exhibit significant weight loss when depressed. NaSSAs are free of serotonin-related side effects, including sexual dysfunction. Some of the DARIs (e.g., vonexerine) are being investigated as treatment for cocaine addiction; other DARIs (e.g., amineptine or Survector, phenmetrazine or Preludin) have abuse potential because of their stimulant properties. Bupropion (Wellbutrin; an NDRI) is used to assist with smoking cessation as well as in the treatment of depression. Benefits of bupropion are that it is energizing, has few sexual side effects, and causes less weight gain. However, bupropion may increase anxiety and insomnia, and it can cause seizures (especially in doses greater than 400 milligrams per day). SSRIs (along with TCAs and MAOIs) work by inhibiting the reuptake of particular neurotransmitters (such as serotonin and norepinephrine). With reuptake, a neurotransmitter is absorbed (or recycled) back into a neuron and is no longer available for use. Inhibiting reuptake allows more of these neurotransmitters to be available for neurotransmission. Bupropion works not by reuptake inhibition (as with SSRIs) but by a complex mechanism that increases the activity of norepinephrine and weakly increases dopamine activity, resulting in some stimulant effect (Preston et al., 2008). SNRIs (also referred to as NSRIs or SSNRIs), including nefazodone (Serzone) and duloxetine (Cymbalta), have been used to treat nerve pain. SNRIs affect multiple neurotransmitter systems. Nefazodone is not only a serotonin and norepinephrine reuptake inhibitor (like the SSRIs), it is also a potent 5-HT2A (serotonin) receptor blocker. Some NRIs (also referred to as NARIs or NERIs), for example, atomoxetine (Strattera, Attentin) and reboxetine (Edronax, Prolift, Vestra), are used as nonstimulant treatments for attention-deficit hyperactivity disorder. These medications have minimal side effects, although they can cause sedation or anxiety. Another NRI, maprotiline (Deprilept, Ludiomil, Psymion) used to treat depression, anxiety, and

insomnia, may worsen psychotic conditions like schizophrenia. Buspirone (BuSpar, Narol), typically used to treat anxiety, is also used as a supplementary treatment for depression. Buspirone's side effects include anxiety, nausea, headache, and dizziness (Preston et al., 2008)

Sudden discontinuation of some atypical antidepressants can result in withdrawal symptoms, which may include dizziness, nausea, sweating, insomnia, tremor, or confusion. A schedule for tapering off antidepressants should be discussed with a doctor. Risks of taking antidepressants while pregnant vary; to avoid potential maternal or fetal harm, consumers should discuss all potential risks with a doctor. To avoid potentially harmful side effects and drug interactions, health care consumers should be sure that their doctors and pharmacists are aware of *all* medications they are taking, including over-the-counter medications, herbs and natural remedies, and dietary supplements.

See also antidepressant, monoamine oxidase inhibiter, neurotransmitter, Prozac (fluoxetine), selective serotonin reuptake inhibitor, St. John's wort, tricyclic antidepressant.

Further Readings:

American Psychiatric Association—Healthy Minds Web site: http://www.healthyminds.org/
Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/
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Autistic Spectrum Disorders

Autism, first described by Leo Kanner in 1943, has three main characteristics: disturbances in social relationships, limited use of language to communicate, and fixed, repetitive interests. The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994) recognized autism as a family of related neurodevelopmental disabilities of varying degrees. Types of autistic spectrum disorders (ASD) include autistic disorder, Asperger's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). Autistic disorder involves impairments in communication and social interaction and restrictive, repetitive patterns of behavior and interests, with onset before three years of age. While repetitive, stereotyped behavior is required for a diagnosis of autistic disorder, it is not necessary for a diagnosis of PDD-NOS. Asperger's disorder, first identified by Hans Asperger in 1944, involves impairment in social interactions and restricted, stereotyped interests that impair social and other functioning but no significant cognitive or language developmental delays or lack of age-appropriate self-help skills. Individuals with Asperger's may exhibit a literal, formal, or unusual manner of speaking and narrow interests. The term *high-functioning autism* is sometimes used interchangeably for Asperger's disorder, although some professionals in the field of ASD see a distinction between Asperger's and high-functioning autism.

ASD fall within two major categories: complicated autism and essential autism. Complex autism, which accounts for about 20 percent of ASD cases, includes evidence of

abnormal early embryonic development, accompanied by differences in physical appearance or head size (University of Minnesota Institute for Community Integration [UMICI], 2006–2007). Complex autism is associated with lower IQs, more seizures, more abnormal EEGs (electroencephalogram), and more brain magnetic resonance imaging differences. Essential autism is associated with fewer seizures and with more cases of normal development until two years of age (followed by loss of previously acquired language and social skills) and appears to have greater heritability, occurring more often in individuals who have relatives with ASD.

Recent estimates from the Centers for Disease Control Autism and Developmental Disabilities Monitoring Network (2007) show that about 1 in 150 children have an ASD (0.66%). For every girl diagnosed with ASD, three to six boys are diagnosed (estimates vary). About 75 percent of individuals with ASD have IQs below 70. About 10 to 15 percent of individuals exhibit splinter skills or savant-like behavior: unexpectedly high performance in a particular area, especially compared with the individual's performance or skills in most areas.

Theory of mind deficit refers to difficulty or inability to infer the emotional state or intentions of others from nonverbal signals (e.g., facial expressions or body language) or linguistic cues (prosody). While theory of mind deficits have been observed in individuals with ASD, this does not mean that people with ASD do not experience emotions, including empathy. Individuals with ASD may need direct instruction in ways to demonstrate empathy or engage in social reciprocity.

Autism is a collection of symptoms rather than a specific disease, with multiple biological factors contributing to its manifestation. Research has established genetic links with autism, but more research is needed to pinpoint the specifics (Shaw, 2007). Research has also looked into environmental causes of autism. Prenatal infections, maternal alcohol abuse, and other problems in pregnancy can cause neurological damage to the central nervous system, resulting in autism (Hardman, Drew, & Egan, 2006). Some parents are concerned that autism may be caused by vaccines; however, research has not established a relationship between vaccinations and autism (Allday, 2008). Research has found rare links between mitochondrial disease and autism (Solomon, 2008); however, more research is needed to determine what (if any) relationship exists.

Early diagnosis of autism is essential to initiate early, intensive interventions that yield the most positive outcomes in the lives of people with ASD. Indicators of possible ASD in very young children may be seen in behaviors the child is not exhibiting as frequently (or at all) as would be expected for a typically developing child of the same age. One of the most reliable indicators distinguishing a child with ASD from typically developing peers is a child who does not respond consistently to his or her name by 12 months (assuming hearing is normal). While a *lack* (or deficit) of behaviors may indicate ASD in younger children, *excessive* behaviors may indicate ASD in older children (UMICI, 2006–2007). Excessive behaviors may include such things as repeating phrases over and over, acting aggressively, memorizing textbooks, or having difficulty with transitions. Possible indicators of ASD in older children may include failure to develop appropriate peer relationships, impairment in ability to use language in a socially appropriate way (e.g., initiate or sustain a conversation), stereotyped or repetitive use of language, atypical preoccupation with an interest, or inflexible need for nonfunctional routines or rituals.

Effective, scientifically based, and promising interventions for autism include early age of entry; daily individual attention to address educational, social, and behavioral goals with sufficient intensity; applied behavioral analysis; programs that provide structure and support organizational challenges; direct instruction of skills (e.g., behavioral, cognitive, social/interpersonal); and support for transitions (e.g., from preschool to kindergarten or elementary to middle school; UMICI, 2006–2007). It is especially critical to begin early to prepare individuals with ASD for the transition from high school to independent living and employment.

Many treatments have been developed for autism, but they are not all supported by statistically sound, evidence-based research. For example, some parents and online autism support groups give anecdotal reports that a gluten-free, casein-free (GFCF) diet has helped resolve behavioral problems in children with autism. However studies into the GFCF diet have some methodological flaws and have yielded inconclusive results (DePinna & McCabe, 2008). Another controversial intervention for helping nonverbal people with developmental disabilities to communicate is facilitated communication, which involves a facilitator (a person) supporting the hand or arm of a person with autism over a keyboard or letter board. Some studies have claimed that the person with autism is communicating via the keyboard, and the facilitator is only stabilizing the arm of the person with autism. Other studies, however, have demonstrated that when the facilitator cannot see the keyboard (or participate fully in the two-way communication), the person with autism is no longer able to communicate in the same manner via the keyboard. Critics of facilitated communication claim that the facilitator is not just stabilizing but (knowingly or unknowingly) guiding the purported communication of the person with autism (Ikeda, 2002). In 1994, the American Psychological Association issued a resolution stating its position that facilitated communication is a controversial and unproved procedure with no scientifically demonstrated support for its efficacy. Other questionable or risky treatments for autism include chelation therapy, treatment with Secretin, and sensory integration therapy (Ikeda, 2002). Some interventions and treatments for autism show promise, but further research is needed to establish effectiveness.

See also theory of mind.

Further Readings:

Autism Research Network, National Institutes of Health Web site: http://www.autismresearchnetwork.org/AN/

Autism Society of America Web site: http://www.autism-society.org/

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- Temple Grandin, a woman with Asperger's syndrome, has written several books describing her experience, providing original insight into living with an autism spectrum disorder. She describes her hypersensitivity to noise and other sensory stimuli, says that she is primarily a visual thinker, and says that language is her second language.
- Autism is part of a group of disorders called autism spectrum disorders (ASDs), also known as pervasive developmental disorders. ASDs range in severity, with autism being the most debilitating form, while other disorders, such as Asperger's syndrome, produce milder symptoms.
- It is difficult to estimate the prevalence of autism because of differences in the ways that cases are identified and defined, differences in study methods, and changes in diagnostic criteria. A recent study reported the prevalence of autism in children ages 3 to 10 to be about 3.4 cases per 1,000 children.

Source: http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america.shtml

Autogenic Training

The relaxation technique autogenic training has its origins in some observations made by German brain physiologist and hypnotist Oskar Vogt in the late 1800s. Vogt noticed that his patients who were able to hypnotize themselves reported fewer symptoms (headaches, tension, fatigue, etc.) than those who were not hypnotizable. A few decades later, German psychiatrist and hypnotist Johannes Schultz became interested in Vogt's findings and wanted to help patients who could not be hypnotized. He had learned that his hypnotizable patients reported that as they were hypnotized, they felt sensations of heaviness and warmth. He reasoned

that if he induced the sensations of heaviness and warmth, something he could do with both hypnotizable and nonhypnotizable patients, this induction may be associated with the positive effects that hypnosis patients reported. Schultz tested his theory and found that his predictions were correct.

In 1932, he published a book called *Autogenic Training*, combining autogenic instructions with some yoga techniques. Schultz described six standard themes that are to be utilized to reverse the fight-or-flight response (stress response). The first theme is heaviness throughout much of the body, which is associated with relaxation of muscles. The second theme is warmth and involves imagining that one's limbs are warm, which can lead to dilation of blood vessels, increased blood flow, warmth, and relaxation. Themes three and four entail standardizing the heartbeat by saying to oneself "My heartbeat is calm" and regulating breathing by saying to oneself "It breathes me." The fifth theme warms and relaxes the abdominal area, stating to oneself, "My solar plexus is warm." Last, one reduces blood flow to the head by saying "My forehead is cool" (Schultz found that inducing warmth in the forehead could interfere with relaxation or cause pain).

In *Autogenic Training*, which is now out of print, Schultz described a precise procedure for inducing relaxation. In *The Relaxation and Stress Reduction Workbook*, Davis, Eshelman, and McKay (2008) provide many of Schultz's general instructions plus modifications of the general technique, directions for creating one's own audiotape for self-induced autogenic training, and contraindications for autogenic training (i.e., the procedure is not recommended for children under age five). Autogenic training has been helpful in treating general anxiety and depression (e.g., Shapiro & Lehrer, 1980) and some physical disorders including headaches (Labbé, 1995), menstrual discomfort (Blanchard & Kim, 2005), and cancer through improving immune function (Hidderley & Holt, 2004).

See also deep breathing, meditation, progressive muscle relaxation, stress.

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Autonomic Nervous System

The nervous system is divided into two main parts: the central nervous system, which is all nerves in the brain and spinal cord, and the peripheral nervous system,

which includes all other nerves throughout the body. The autonomic nervous system (ANS) is a division of the peripheral nervous system, which controls the activity of the internal organs and glands. While the somatic nervous system (the other subdivision of the peripheral nervous system) consists of the neurons (nerve cells) that monitor and affect the sensory and motor organs such as the skeletal muscles, the ANS operates on the involuntary muscles of internal organs, muscles of the gastrointestinal tract, the cardiac muscle, exocrine glands (e.g., sweat glands, salivary glands), and some endocrine glands (which secrete hormones).

The primary role of the ANS is to maintain homeostasis—regulating the internal environment of the body to maintain a stable state in response to changes in the environment. The ANS adjusts internal activity and regulates the supply of energy to meet demands. For instance, when one is asleep, the ANS slows down the heartbeat and respiration rate, whereas when one is jogging, it accelerates the heartbeat and respiration to provide energy to the skeletal muscles. Different hormones are released depending on whether one is in a relatively vegetative or activated state. These physiological actions are usually involuntary, and some do not reach human consciousness.

The two divisions of the ANS have different functions. Prominent in stressful, fight-or-flight situations, the sympathetic nervous system (SNS) prepares the body for stress by slowing down digestion, increasing activity of the cardiovascular system by increasing heart rate and blood pressure, and releasing stress hormones. This helps the body to have enough energy for the skeletal muscles, in case a fight or flight is necessary. Functionally, the parasympathetic nervous system (PNS) restores energy to the body while at rest. It generally operates when one is relaxed, increasing digestive activity and reducing heart rate and blood pressure. Most internal organs have both sympathetic and parasympathetic nerves. The two divisions of the peripheral nervous systems work in a complementary fashion to maintain homeostasis.

Emotional states tend to be associated with autonomic arousal, especially sympathetic arousal. In general, negative emotions may be associated with greater autonomic arousal than is present during positive emotional experiences. Early emotion theorists such as William James (1884) and Walter Cannon (1927) observed the cooccurrence of emotional feelings and physiological arousal or brain activity. They and others developed theories about the exact way that either physiology (autonomic activity in particular) or brain activity and emotional experiences may be associated. James argued that a physiological response occurs first, then an emotion results. Cannon, on the other hand, proposed that emotional feelings, cognitions (thoughts), and physiological reactions occur simultaneously. As some modern emotion researchers state (e.g., Larsen, Berntson, Poehmann, Ito, & Cacioppo, 2008), the issue of whether physiology causes emotional feeling or some other relationship exists between physiology and emotional feeling remains unresolved. As Larsen et al. (2008) further discuss, it is clear that emotional experiences may be, and usually are, caused through more than one route. The relationship between autonomic activity and emotional experience remains an active area of research.

See also Cannon-Bard theory of emotion, James-Lange theory of emotion, parasympathetic nervous system, sympathetic nervous system.

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Aversion

An aversion is an intense dislike of an object, situation, or activity. Behaviorally, aversion is demonstrated through avoidance. Aversion to an object, situation, or activity may be conditioned through associating the object, situation, or activity with a painful or unpleasant stimulus. In psychology, types of aversion that have been studied extensively include conditioned (learned) taste aversion, risk aversion, and loss aversion.

A common example of conditioned taste aversion occurs with food poisoning. When food poisoning occurs, the symptoms (vomiting, etc.) are so unpleasant that one single instance of associating the tainted food with the vomiting and other symptoms can produce a long-lasting aversion for that type of food. For instance, one of the authors developed an aversion to spaghetti with tomato sauce that lasted for several years after experiencing food poisoning symptoms following a spaghetti dinner. Conditioned taste aversions have been studied formally. Freeman and Riley (2009) describe the history of the study of conditioned taste aversions. As they discuss, research on conditioned taste aversion began shortly after World War II and followed two main lines, both of which were related to military concerns. The purpose of one line of research was to develop techniques to control rodent infestations in foxholes and on beachheads. A second was an attempt to understand the effects of radiation on organisms. Within a few years, a large volume of research had been produced. Some areas that have been researched in addition to those areas described are using taste aversion to treat alcohol addiction, taste aversions in pregnancy, and taste aversions in patients undergoing chemotherapy.

Risk aversion and loss aversion have also been subject to study. These concepts are most often applied to economic decision-making behavior. Risk aversion is the reluctance that an individual has to make a choice in which the payoff is uncertain when at the same time, another, more certain choice with the possibility of a lower payoff is available. For instance, an individual could be asked to choose between two options. The first option involves being given $25, no strings attached. The second option involves tossing a coin. Heads up, the individual receives $50 and heads down, she receives $0. The risk-averse person will choose the certain $25. American statistician and mathematician John W. Pratt (1964) developed the idea of risk aversion in the 1960s, and theorizing and researching about the concept has exploded over the decades. A number of excellent books are available describing risk-averse and risk-loving behavior under uncertainty, including Bernstein's *Against the Gods: The Remarkable Story of Risk* (1998) and Kahneman and Tversky's edited volume *Choices, Values, and Frames* (2000).

Loss aversion is an overweighting of losses to gains (Kahnman & Tversky, 1979). In general, large losses are more salient in our memories than large

gains and have the potential to affect future risk-taking behavior more than do larger gains. In fact, people who have developed loss aversion in a particular area have greater risk aversion in that area. For instance, if one lost her life savings at age 50 due to investing in risky stocks in the stock market coupled with a downturn in the market, in the future, she will tend to invest more conservatively in the stock market or perhaps invest outside of the stock market altogether, for instance, in real estate. The loss has led to loss aversion, which is expressed as risk aversion. Bernstein describes several real-life examples of loss aversion in his book *Against the Gods: The Remarkable Story of Risk.*

See also aversive conditioning (aversion therapy), behaviorism, conditioned emotional response.

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Aversive Conditioning (Aversion Therapy)

Aversive conditioning is a behavioral treatment for unhealthy emotional or behavioral habits such as alcoholism, smoking, drug abuse, self-injury (such as head banging) among autistic patients, and sexual fetishism, among others. In the past, aversive conditioning was utilized to "treat" homosexuality, which was classified as a disorder by the American Psychiatric Association until the 1970s. Professional organizations such as the American Psychological Association (APA) do not consider homosexuality to be a mental disorder; as such the APA does not support efforts to change sexual orientation using unproven or unsafe methods such as aversive conditioning (American Psychological Association, 2009).

Aversive conditioning involves associating the unhealthy habit with something highly unpleasant. For instance, drinking alcohol may be associated with nausea and vomiting. The goal is to produce an aversion for the unhealthy habit. In the example of alcohol, if the addicted individual is in a clinic, she could be injected with a drug that causes nausea and vomiting. When the drug begins to take effect, the individual is instructed to drink some alcohol. The idea is that the nausea and vomiting will be associated in the person's mind with drinking alcohol. For greater effectiveness, this procedure is repeated over a number of sessions, possibly for several months. In some cases, treatment occurs for a lifetime. Other aversive stimuli that are used in treating unhealthy habits include other medications, mild electric shock, foul odors, and unpleasant tastes.

Aversive conditioning has a long history. Kantorovich (1929) treated alcoholism through associating alcohol with painful electric shocks. Max (1935) showed a patient "homosexual images" and subjected him to electric shocks to cure his "homosexual fixation." As may be apparent, aversive conditioning can be a controversial treatment. However, in some cases of unhealthy habits, other treatments have been of very limited utility, or using aversive conditioning as an adjunct to another treatment increases the success rate. Perhaps the most controversial use of aversive conditioning is among self-injurious and/or violent people diagnosed with autism or other disorders. These individuals may bang their heads, bite or punch themselves, or injure others. Some injuries to both self and others can be quite severe, including brain damage and significant loss of flesh from biting, and some individuals attempt to engage in these behaviors almost continuously. At the Judge Rotenberg Center in Canton, Massachusetts, after permission involving many levels of review, including a court order, children who do not respond to other treatments are strapped with a backpack that delivers a mild shock when the child is violent to self or others.

Success of aversive conditioning varies. According to the Judge Rotenberg Center Web site, their use of this technique for difficult-to-treat children is highly successful. However, aversive conditioning usually produces only limited success if used as a sole treatment for alcohol or drug abuse but can be moderately successful when used in conjunction with biological approaches (e.g., detoxification in the example of alcohol) or psychotherapy.

See also alcohol abuse and alcoholism, autistic spectrum disorders, behavior therapy.

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Judge Rotenberg Center Web site: http://www.judgerc.org/

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Aversive conditioning was illustrated in Stanley Kubrick's 1962 film *A Clockwork Orange* as a means to treat criminals of violent behavior.

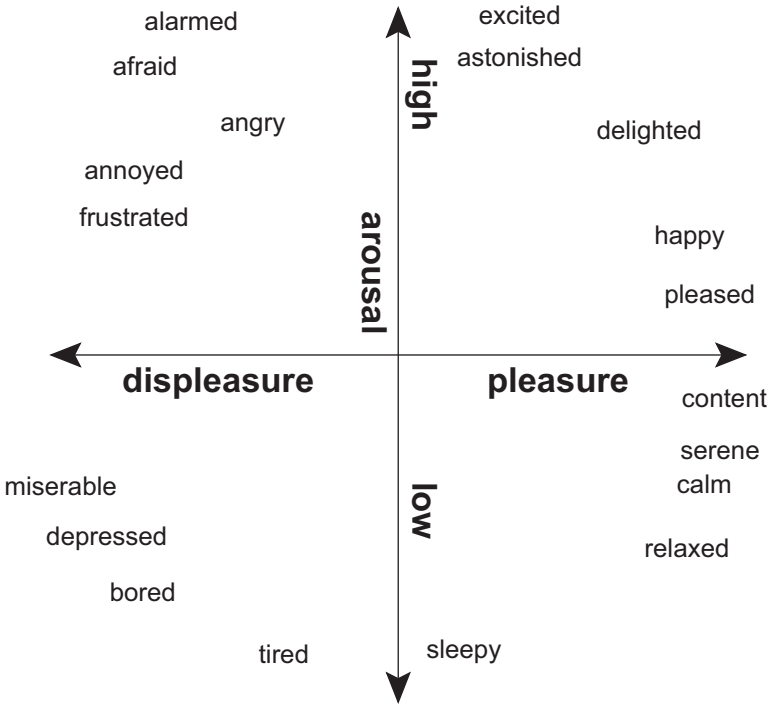
B

Basic Emotions

An early emotion researcher in modern times was Charles Darwin. In his writings he addressed many of the same questions about emotion that concern us today. One of these issues is whether basic emotions exist. Basic emotions, if they exist, are emotions that are fundamentally distinguishable from one another, qualitatively different; they exist as separate categories in which primary characteristics of the emotions overlap minimally between the emotions. People have a tendency to categorize as a means of simplifying the complexity of experience. After categorizing, which involves identifying fundamental elements of a phenomenon, people may then proceed to classify and systematize the elements. This approach to understanding worked very well in chemistry when Dmitry Mendeleyev produced the periodic table of chemical elements. However, it is not clear that the emotion domain has leant itself so neatly to classification, and emotion experts disagree about whether classifying emotions as distinct types is the best way to comprehend emotion.

Regardless of how emotions exist in reality, it is clear that people tend to think of emotions as separate categories—happiness, sadness, fear, anger, and so forth. There are two main explanations for our tendency to see emotions as categories. The first is that we are interpreting reality accurately—basic emotions really exist. If this is true, then the different emotions are at least partly, possibly largely, hardwired or genetically determined. According to this explanation, we are born with the tendency to feel fear, happiness, and anger. A second possibility is that our experiencing of emotions as distinct types is learned. This is called the *social construction explanation.* More precisely, it means that as children develop, they are experiencing their emotional reactions—which are not as distinct as the basic emotions concept suggests—and interpreting and labeling them based on what their culture tells them they are feeling (Neimeyer, 1995).

A number of researchers have attempted to tackle this issue of whether basic emotions exist. They have identified criteria that they suggest should be met to demonstrate the existence of basic emotions. To make this basic emotions issue even more complex than what has already been described, some controversy exists regarding whether any particular criterion that has been identified is relevant to



In 1980, psychologist J. A. Russell used statistical techniques to produce a two-dimensional map of the mental space of emotions. Russell's circumplex model has two axes that might be labeled as displeasure/pleasure (horizontal axis) and low/high arousal (vertical axis). (ABC-CLIO)

the issue of whether basic emotions exist. For instance, both Ekman (1994) and Panksepp (1994) have identified criteria, each of which is agreed on by some emotion experts but not others. One criterion that most researchers agree on is that a basic emotion should be universal within the species; that is, almost all people in all societies should experience that emotion. If it was discovered that in all societies people experience fear, then perhaps it is a basic emotion (but simply finding that does not preclude the possibility that fear does not exist as a basic emotion, but instead that people in different societies had exposure to one another and have similar learning experiences that lead to labeling some reactions as fear). Conversely, if fear is not present in all societies, it is not a basic emotion. A second criterion is that if an emotion is basic, then there is an inborn way to express that emotion in at least one manner such as through facial expression or body posture. Many researchers say that the evidence is strong that some emotions exist as basic emotions (e.g., Ekman, 1994; Panksepp, 1994). Emotions that are commonly identified as basic by those who ascribe to the idea of basic emotions are happiness, sadness, fear, anger, disgust, and surprise. Among those who agree that basic emotions exist, there is disagreement regarding how many there are and which exactly they are. For instance, some other candidates for basic emotions include love, embarrassment, guilt, contempt, and jealousy.

If emotions do not exist as distinct categories, a leading alternative possibility is that emotions exist on a continuum or continua, with no real natural or distinct boundaries. In other words, the emotions that we tend to think of as different from one another are less different than we think, and the "basic" units are dimensions, not the emotions themselves. For instance, anger and fear are not really completely different; they simply reflect different ratios of the same ingredients. James Russell (1980) proposed a circumplex model in which emotions vary on two dimensions: degree of arousal and degree of pleasure.

See also animals, Charles Darwin, Paul Ekman, emotional expression, facial expression, human development.

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Aaron T. Beck (1921–)

Aaron T. Beck has been a practicing psychiatrist for 59 years. He is considered the father of cognitive-behavioral therapy (CBT). Beck is a native of Providence, Rhode Island. He was the youngest of three siblings. He grew up in a Jewish family; his parents emigrated from Russia. When he was a child, Beck broke his arm and developed septicemia (a blood infection). His arm was almost amputated. Subsequently, he developed an intense fear of surgery and a blood injury phobia. In a 2004 interview, Beck stated that when he was in medical school, he often became faint if he saw anything related to injury or surgery. He would go to the operating room to desensitize himself. This was one of the roots to his idea that it was possible to overcome very disabling symptoms (Bloch, 2004).

Beck graduated magna cum laude from Brown University in 1942. He obtained his medical degree from Yale in 1946, followed by residencies in pathology, neurology, and psychiatry. During the Korean War, Beck was assistant chief of neuropsychiatry at Valley Forge Army Hospital. In 1954, he joined the Department of Psychiatry at the University of Pennsylvania (Shine & Alberts, n.d.).

Trained in Freudian psychoanalytic theories, the prevailing treatment at that time, Beck developed a different theoretical approach he labeled *cognitive therapy*. Cognitive therapy (which eventually became CBT) was influenced by behaviorism. Since 1959, Beck has conducted a great deal of research on the effectiveness of CBT. CBT has been used to treat depression, suicidal ideation, anxiety disorders, panic disorders, alcoholism, drug abuse, personality disorders, and schizophrenia. CBT

is based on the idea that patterns of negative beliefs (about self, the world, and the future) are at the root of many mental health disorders. CBT strives to change patterns of negative belief by neutralizing (or reprogramming) automatic thoughts. His current work involves disseminating empirically based treatments (backed by research results) into community settings and training CBT therapists (Shine & Alberts, n.d.). Beck has said that the most profound influences on his theories and therapeutic approaches was the work of German psychiatrist Karen Horney, Austrian psychiatrist Alfred Adler, and American psychologist and developer of rational emotive behavior therapy Albert Ellis (Bloch, 2004).

Beck is president of the Beck Institute for Cognitive Therapy and Research (his daughter Judith is the director), which trains therapists in CBT. He is professor emeritus of psychiatry at the University of Pennsylvania. He has served on numerous review panels and editorial boards and lectures throughout the world. He has published over 540 articles and authored or coauthored 22 books (Shine & Alberts, n.d.). Beck has created several rating scales, including the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh 1961), widely used in the clinical screening of depression. He has also authored or coauthored the Beck Hopelessness Scale (1988), the Beck Anxiety Inventory (1990), the Beck Scale for Suicide Ideation (1991), and the Clark-Beck Obsessive-Compulsive Inventory (2002). All the Beck rating scales are currently published by Pearson Assessments.

Beck has been married for 59 years; his wife (a judge) was the first woman to be elected to the Appellate Court in the state of Pennsylvania. He has four children and eight grandchildren (Shine & Alberts, 2009). Three of Beck's children have gone into fields related to CBT (Bloch, 2004).

See also Beck Anxiety Inventory, Beck Depression Inventory, Beck Scale for Suicide Ideation, behaviorism, cognitive therapy and cognitive-behavioral therapy, Albert Ellis, Karen Horney.

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Beck Anxiety Inventory

The Beck Anxiety Inventory (BAI) was created by Aaron T. Beck and Robert A. Steer in 1990. It is published by Pearson Assessments. Dr. Beck is also the author of other social-emotional screening tools (e.g., Beck Depression Inventory, Beck Hopelessness Scale, Beck Scale for Suicide Ideation, and Clark-Beck Obsessive-Compulsive Inventory). It was developed as a means to reliably differentiate clinical

symptoms of anxiety from those of depression. The BAI is designed for individuals 17 through 80 years of age; it is available in English and Spanish. It is a 21-question multiple-choice self-report that is used to measure the severity of anxiety symptoms. Individuals answer questions about the severity of their anxiety symptoms (e.g., hot and cold sweats, feelings of dread) over the past week. Each question has four choices, ranging from not at all (0) to severe (3). Responses for all 21 questions are tallied, yielding an overall anxiety severity score. The maximum score is 63, where a total score from 0 to 7 indicates a minimal level of anxiety, 8–15 mild anxiety, 16–25 moderate anxiety, and 26–63 severe anxiety. The BAI is particularly useful for distinguishing individuals with panic disorders from those without panic disorders (e.g., Leyfer, Ruberg, & Woodruff-Borden, 2006).

See also anxiety, Aaron T. Beck, Depression Anxiety and Stress Scales, generalized anxiety disorder, panic disorder, phobia, Revised Children's Manifest Anxiety Scale, State-Trait Anxiety Inventory.

Further Reading:

Pearson Assessments Web site: http://pearsonassess.com/

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Beck Depression Inventory

The original Beck Depression Inventory (BDI) was created by Dr. Aaron T. Beck in 1961 (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). It was revised in 1978 (BDI-1A). The current version (BDI-II, 1996), authored by Aaron T. Beck, Robert A. Steer, and Gregory K. Brown, is published by Pearson Assessments. The BDI is one of the most widely used instruments for clinical screening of depression (Demyttenaere & De Fruyt, 2003). It is a 21-item instrument that assesses severity of depression. Each item relates to a symptom of depression and offers four choices (of increasing severity). For each item, an individual chooses which statement best describes his feelings over the past two weeks. The 21 items on the BDI-II match depression criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). This simplifies a clinician's task of determining whether depressive symptoms meet *DSM-IV-TR* clinical criteria for a depressive disorder. It takes five minutes to complete and can be administered in an interview format or self-administered. It is available in English and Spanish. It is designed for individuals aged 13 to 80 years.

See also Aaron T. Beck, Children's Depression Inventory, depression, Depression Anxiety and Stress Scales, dysthymia, Hamilton Depression Scale.

Further Readings:

Pearson Assessments Web site: http://pearsonassess.com/haiweb/cultures/en-us/productdetail.htm?pid=015-8018-370/

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Beck Scale for Suicide Ideation

The Beck Scale for Suicide Ideation (BSS) was authored by Aaron T. Beck in 1991 and is published by Pearson Assessments. It is a 21-item scale designed to evaluate suicidal thinking. It can be administered by an interviewer or completed by an individual as a self-report. It takes 5 to 10 minutes to complete. Five initial screening items reduce the length and intrusiveness of the questionnaire for individuals who are not suicidal. It is designed for individuals aged 17 and over and is available in English and Spanish.

See also Aaron T. Beck, Beck Depression Inventory, Children's Depression Inventory, depression, Depression Anxiety and Stress Scales, dysthymia, Hamilton Depression Scale.

Reference:

Pearson Assessments Web site: http://pearsonassess.com/haiweb/cultures/en-us/productdetail.htm?pid=015-8018-443

Behavior and Emotion

Emotions and behavior are intimately connected. Emotions are associated with behavioral modes of expression, which include facial expression, posture, large body movements, and others. Research on facial expression has been extensive (e.g., see Ekman & Friesen, 1975), and enough has been learned in this area that valid applications have been developed. These applications have helped psychologists to understand their clients, helped government agencies to identify lying, and have even been put to use by animators and computer scientists. Study of other behavioral manifestations of emotion has also increased our knowledge of the relationship between emotion and behavior. Allspach and Burgoon (1999) discuss research findings that large body movements are typically related to emotion in broad, general ways. In other words, large body movements tend to convey general emotion information (e.g., withdrawal or approach tendencies), without clear relationships with specific emotions (unlike facial expressions, which often express specific emotions). As another example, Montepare, Goldstein, and Clausen (1987) found that people are able to identify happiness, sadness, anger, and pride—at better than chance levels—from observing an individual's gait.

Several prominent theories exist regarding the relationship between behavior and the feeling or subjective experience of emotion. In the classic James-Lange theory (Lange & James, 1967), first discussed in the late 1800s, behavior occurs before feeling; the individual notices a stimulus (e.g., a bear running toward him), a physiological response occurs, often a[illegible] by a behavioral response (e.g., his heart races and he perspires, and so fo[illegible] and he runs away), then the emotional feeling occurs last. In the Cannon-Bard [illegible] (Cannon, 1915/1929), an event occurs (e.g.,

a bear runs toward an individual), and the aspects of emotion—cognitive appraisal or assessment, action (behavior and physiology), and emotional feeling—occur simultaneously and practically independently of one another.

Emotions are often related to motivated or impulsive behavior. Ancient Greek and Roman scholars who wrote about emotions often discussed the difficulties that emotions may cause. Plato spoke of emotion as "appetite," which must be guided by reason. While the Epicureans valued simple, daily pleasures, they warned people against the strong passions. They realized that it is difficult to stop an emotion once it begins, so people must learn to prevent the strong passions from occurring in the first place. The Stoics were even more extreme than the Epicureans in their admonition to eliminate emotions. They believed that any desire has the potential to cause destructive behavior and that people should learn to examine their desires before acting on them. Before behaving, people should determine whether the desire derives from something of value rather than a desire based on valuing something transitory in life. The Stoics referred to these transitory desires—such as money or power—as "indifferents." According to the Stoics, the only true values are character, rationality (our ability to reason), and kindness. Similar philosophies that emphasize a controlling of our passions exist today. Examples are cognitive therapy and cognitive-behavioral therapy, in which people examine the rationality of their beliefs, and the varieties of meditation, which teach people to observe their experiences, both external and internal ones (thoughts, emotions, etc.), without judging them or becoming attached to them. As has been observed since civilization began, strong emotions have the potential to cause aggressive, manipulative, impulsive, controlling, or other destructive behaviors.

With animals, the only way to observe emotions—with the possible exception of physiological response (which is often impractical, requires careful measurement, and does not have a high level of specificity)—is to observe their behavior. Over 100 years ago, in his classic book *The Expression of the Emotions in Man and Animals*, Charles Darwin (1872/1998) described his and others' observations of apparent emotional expressions of animals, showed their similarity to emotional expressions of humans, and argued that emotional expression must have evolved through natural selection in the same way that other characteristics evolved. Darwin's book includes descriptions, drawings, and photographs of facial, body posture, and other types of emotional expressions in several species, including domestic dogs, domestic cats, several monkey species, several bird species, and humans. For instance, he described and graphically represented that a threatened dog or cat displays a snarling expression that looks similar to the angry expression of a human. Research on emotional behavior in animals continues into modern times. American biologist Marc Bekoff (2008) describes modern research in his book *The Emotional Lives of Animals.*

See also animals, Cannon-Bard theory of emotion, cognitive therapy and cognitive-behavioral therapy, The Epicureans, Facial Action Coding System, facial expression, James-Lange theory of emotion, meditation, nonverbal expression, Plato, The Stoics.

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Behavior Therapy

A necessary precursor to the development of many forms of behavior therapy was the emergence of American behaviorism. In 1913 American psychologist John Watson was instrumental in introducing this new paradigm, behaviorism, through publishing a classic paper, "Psychology as the Behaviourist Views It" (otherwise known as the "Behaviorist Manifesto"), in which Watson argued that psychology needed to change if it was to be regarded as a true science. According to Watson, psychology should be the study of observable and objectively measurable events only (i.e., behavior), not the study of mental processes such as thoughts, emotions, dreams, or needs. His criticism was directed toward much of psychology, including Freud's psychoanalysis and the work of those research scientists, such as American William James and German Wilhelm Wundt, who studied psychological factors through relying on subjective data, for instance, research participants' reports of their own feelings, thoughts, sensations, and so on. Watson set out to show that behaviorism could have practical implications; behaviorism could involve a workable research methodology. Within a few years, he and his research assistant, Rosalie Rayner (Watson & Rayner, 1920), had published an article that demonstrated how behaviorism could be translated into science. The study presented in this article, the classic Little Albert study, showed that a human infant can be trained through behavioral techniques to fear a previously unfeared object (in this case, a white rat). Furthermore, this fear generalized to other furry objects (e.g., a dog, a monkey, a seal skin pelt, and a Santa Claus mask).

In general, behavior therapy involves one of two types of conditioning procedures. One type is operant conditioning, associated most often with B. F. Skinner. In operant conditioning, individuals (animals or humans) learn and produce future behavior because of the consequences of their behavior. An individual's behavior may be followed by either a reward (reinforcement) (money, praise, food, etc.) or a punishment (spanking, scolding, etc.) and this consequence of behavior will largely determine whether the behavior is repeated. Thus, in behavior therapy based on operant conditioning, an individual will be reinforced for desirable behaviors. The second main type of conditioning is called classical conditioning, associated with John Watson and Ivan Pavlov. This is when an animal or human associates two external stimuli and therefore learns to react very similarly to these two stimuli. For example, humans and other animals naturally react with fear to loud noises. If a stimulus (such as a rat) is repeatedly associated with a loud noise, and if a person then develops a fear of the rat, [illegible] this fear did not prior to conditioning,

classical conditioning has occurred. This was the type of conditioning that occurred in Watson's classic Little Albert study. A type of behavior therapy based on classical conditioning is systematic desensitization, in which an individual with a phobia (fear) of a specific object or situation learns to associate that feared object (e.g., a snake, a spider, flying in an airplane) with the relaxation response. In time, with treatment, the phobia often diminishes or even disappears.

Behaviorism, although introduced early in the 19th century, did not take root until several decades later for a number of reasons, including that John Watson was dismissed from his academic job for having an affair with his research assistant, Rosalie Rayner. Behavior therapy arose in the 1950s, involving several trailblazers in three different countries: Joseph Wolpe, Arnold Lazarus, and Stanley Rachman in South Africa; Monty B. Shapiro and Hans J. Eysenck in England; and Andrew Salter, Ogden R. Lindsley, and B.F. Skinner in the United States (Forsyth & Sheppard, 2009). These individuals were experimental scientists, and many were also clinicians. They were united by a belief in the importance of demonstrating the efficacy of treatments through scientific studies. This emphasis on producing research findings prior to introducing their therapy techniques distinguished them from many individuals who were publishing and promoting other theories of therapy, particularly talk therapies. Other characteristics of behavior therapy tend to set it apart from talk therapies. First, strict behavior therapists focus on changing behavior only, without a direct concern about accompanying thoughts or emotions. If a phobia is treated through behavior therapy, the primary goal is to remove the phobia, not to talk about how the individual feels about the phobia, what caused the phobia, and so forth. A second, related difference is that in behavior therapy, therapist and client concentrate on the present, presenting problem, without much discussion of the past, such as childhood experiences that may have led to the phobia. Third, behavior therapy is action oriented and experiential. Therapist and client work together to change the behavior; thus the client does activities (e.g., learning how to relax, directly confronting feared objects or situations). These activities may be performed outside of therapy, as "homework," in addition to being performed during a therapy session.

Some behavior therapies, such as systematic desensitization, are widely used and are effective as treatments for particular psychiatric conditions or problem behaviors. However, behavior therapy on the whole has transformed from the original conception, often including consideration of some mental processes, cognition or emotion in particular, or both, to produce more effective treatments. This modification of original behavior therapy is called *cognitive-behavior therapy*, which is now one of the leading forms of psychological treatment.

See also aversive conditioning (aversion therapy), behaviorism, cognitive therapy and cognitive-behavioral therapy, conditioned emotional response, exposure with response prevention, Arnold A. Lazarus, multimodal therapy: BASIC I.D., pet therapy, B.F. Skinner, systematic desensitization, John Watson.

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Behaviorism

Behaviorism is a paradigm in psychology that focuses on studying (considering) behavior, with a deemphasis on mental processes (those psychological aspects that are experienced internally such as emotions, thoughts, motives, and dreams). Individuals who introduced behaviorism argued that behavior can be studied objectively. This means that two or more people can observe behavior and come to some agreement about the nature of what they observe. By contrast, mental processes, which are experienced by the subject only, cannot be studied objectively and therefore are not appropriate subject matter for science. According to the behaviorist argument, if we study mental processes, we are relying on the reports of the person who is experiencing those mental processes. This person could be dishonest or lacking in self-awareness, rendering her or his reports invalid.

John Watson, the early-20th-century American psychologist, is given the most credit for founding behaviorism. He was dissatisfied with the psychology of the time, complaining that psychology was slipshod compared to other sciences such as physics, chemistry, and biology. Watson was disenchanted with two aspects of psychology: the subject matter and the methods of study or research. In 1913, Watson published a paper titled "Psychology as the Behaviourist Views It," which is nicknamed the "Behaviorist Manifesto." The paper outlined his vision of the field, stating that only behavior should be the object of study in psychology (the study of emotions, thoughts, etc., would be the realm of another field such as philosophy) and study procedures should be objective. He added a third goal for the field: research in psychology should always be applied; that is, when a psychologist pursues a research question, she should have a particular application in mind for the research rather than studying simply for curiosity's sake.

Behaviorists also believe that external conditions cause behavior more than do internal factors or variables such as one's emotions or thoughts. According to behaviorists, one's conditioning history can explain much about one's behavior. One type of conditioning that behaviorists study is *operant conditioning*, associated with B.F. Skinner. In operant conditioning, individuals (animals or humans) learn and produce future behavior because of the consequences of their behavior. An individual's behavior may be followed by either a reinforcement (e.g., money, praise, food) or a punishment (e.g., spanking, scolding). This consequence of behavior will largely determine whether the behavior is repeated. The second main type of conditioning is called *classical conditioning*, associated with John Watson and Ivan Pavlov. Classical conditioning occurs when a human or other animal associates two external stimuli and learns to react similarly to these two stimuli. For example, humans and

other animals naturally react with fear to loud noises. If a stimulus (such as a rat) is repeatedly associated with a loud noise—and if a person then develops a fear of the rat, when this fear did not exist prior to conditioning—classical conditioning has occurred.

Behaviorism was championed by Watson, Skinner, and others and reached the height of its popularity in the 1960s. Behaviorism continues to have many useful applications. For example, many forms of behavior therapy, including systematic desensitization and exposure and response prevention, are successful forms of treatment for particular psychiatric conditions. Additionally, teachers use behaviorism (in the form of operant conditioning) in the schools when they reward students with gold stars or immediate praise for good behavior or good academic work.

See also aversive conditioning (aversion therapy), behavior therapy, cognitive therapy and cognitive-behavioral therapy, conditioned emotional response, exposure with response prevention, pet therapy, B. F. Skinner, systematic desensitization, John Watson.

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Bender Visual-Motor Gestalt Test

The Bender Visual-Motor Gestalt Test is used as an aid in diagnosis of brain damage, disorders of perception, learning disabilities, and some types of psychiatric disorders such as schizophrenia and depression. Developed by American neuropsychiatrist Lauretta Bender in 1938, the test is a task that involves copying nine stimulus figures onto a piece of paper. The test may or may not also include requests for additional responses. A commonly used extended method is the Hutt adaptation (Hutt, 1977), in which assessees (people taking the test) are asked to do two additional tasks: first, they are to modify the drawings in any way or ways that would make them better or "more pleasing"; second, they are instructed to view the stimulus card and the drawings and talk about their associations to each. An assumption of the test, whether it is used in its simplest version or more elaborately such as the Hutt adaptation, is that the copying errors that are made are typically the result of some type of pathology or disability, not simply a lack of artistic ability.

The Bender-Gestalt is useful in aiding in the diagnosis of brain damage (e.g., Tolor & Brannigan, 1980). Some types of errors that may suggest brain damage are rotating designs, shape distortions, disproportionality, and fragmented drawings. However, Eno and Deichmann (1980), in their review of use of the Bender-Gestalt with children, recommended against using it as the solitary test for determining a diagnosis. Evidence for utilizing the Bender-Gestalt for specific psychiatric diagnosis is not well established; the Bender-Gestalt Test is not nearly as well researched for this purpose as the more frequently used Minnesota Multiphasic Personality Inventory. However, some evidence suggests validity with specific areas (e.g., visual-spatial processing and visual memory; Decker, Allen, & Choca, 2006).

The Bender-Gestalt has maintained popularity since its development. It is among the top 10 most frequently used psychological tests by clinical psychologists (often in the top 5) and among the top 25 most frequently used by neuropsychologists (Camara, Nathan, & Puente, 2000).

See also Minnesota Multiphasic Personality Inventory.

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Benzodiazepine

Benzodiazepines (e.g., Valium) are one type of medication used to reduce tension, relieve anxiety or irritability, and treat insomnia. Other medications used in the treatment of anxiety disorders include selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs), monoamine oxidase inhibitors (MAOIs), other agents (e.g., barbiturates, meprobamate, sedative-hypnotics, antihistamines, and buspirone), and combination treatments (Patterson, 2006; Preston, O'Neal, & Talaga, 2008).

Humans (and other animals) have adaptive survival mechanisms that cause them to experience fear, which can help them avoid harmful situations. For example, when confronted with a threat (e.g., coming across a rattlesnake), the body may react with increased heart rate, sweating, and other fight-or-flight responses. This adrenaline response may increase one's ability to escape a dangerous situation. The ability to learn what situations may be dangerous allows individuals to avoid these situations in the future. However, when fear is out of proportion to actual threat (e.g., reacting with fear to any mention of snakes), anxiety may ensue. Avoidance learning consists of conditioned fear (an immediate response, including freezing behavior, a feeling of fear, or other reactions), which involves the brain's amygdala, followed by an avoidance response (i.e., movement, such as running away), which involves other brain structures, including the basal ganglia, frontal cortex, and hippocampus (LeDoux, 1996). Benzodiazepines enhance the effects of the neurotransmitter gamma-aminobutyric acid (GABA), an inhibitory chemical messenger that helps regulate excitability, ameliorating the conditioned fear response (LeDoux, 1996).

The first benzodiazepine—chlordiazepoxide (Librium)—was developed in 1957. Benzodiazepines were a significant improvement over previous anxiety medications, which included barbiturates, meprobamate (Miltown), tybamate, glutethimide (Doriden), methyprylon (Noludar), and ethchlorvynol (Placidyl; Preston et al.,

2008). Many of these earlier tranquilizers have high abuse potential; they can cause tolerance and severe withdrawal symptoms. Because many people have anxiety or insomnia, benzodiazepines have been widely used. Valium, which was introduced in 1963, became one of the best-selling pharmaceutical drugs on the market, reaching peak sales in the United States in 1978 (Bakalar, 2005). Valium had a mixed reputation: at times it was promoted as a harmless panacea. It gained cultural notoriety in the Rolling Stones song "Mother's Little Helper." Some of the dangers of Valium (e.g., addiction and withdrawal) were described in the 1979 book *I'm Dancing as Fast as I Can* (Gordon, 1979).

Benzodiazepines have both sedative and hypnotic properties. Medications with sedative properties are used to treat anxiety; hypnotics are used in the treatment of insomnia (to induce or maintain sleep). Benzodiazepines are also used as anesthetics or to aid in withdrawal from other drugs. Benzodiazepines are fast acting and effective against anxiety. They can cause sedation, slurred speech, lack of coordination, and lessening of inhibitions. Some benzodiazepines (triazolam, midazolam, and lorazepam) can cause anterograde amnesia, resulting in memory loss for a period of time after the drug has worn off (Preston et al., 2008). Different benzodiazepines have varying degrees of abuse potential, physiological dependence, and withdrawal symptoms. It can be dangerous to combine benzodiazepines with alcohol; this combination is what caused Karen Ann Quinlan's coma (Preston et al., 2008). In addition to Librium, some of the better known benzodiazepines include alprazolam (Xanax), clonazepam (Klonopin), diazepam (Valium), flunitrazepam (Rohypnol), flurazepam (Dalmane), lorazepam (Ativan), midazolam (Versed), temazepam (Restoril), and triazolam (Halcion). Some of the newer atypical benzodiazepines (e.g., ProSom, quazepam) and nonbenzodiazepines (e.g., Ambien, Lunesta, Sonata) are used as hypnotics; they may be associated with less cognitive impairment, daytime fatigue, and a reduced risk of dependency. Benzodiazepines should not be used during pregnancy or while nursing (Preston et al., 2008).

See also amygdyla, anxiety, Anxiety Disorders Association of America, anxiolytic, beta blockers, fear, generalized anxiety disorder, neurotransmitter, panic disorder, phobia, Valium.

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Beta Blockers

A beta blocker is one of a class of drugs most often used for the management of cardiac arrhythmias following heart attacks. Beta blockers are no longer the preferred treatment for hypertension (high blood pressure) as they carry a risk of provoking type II diabetes, and other drugs are more effective. Beta blockers (also written ß-blockers), also known as beta-adrenergic antagonists, beta-adrenergic blocking agents, or beta antagonists, include propranolol (Inderal), atenolol (Tenormin), and nadolol (Corgard).

Beta blockers have been used off-label (not approved by the U.S. Food and Drug Administration) to treat posttraumatic stress disorder, anxiety symptoms, nongeneralized (performance-type) social anxiety disorder, panic disorder (with and without agoraphobia), social phobia, and drug and alcohol withdrawal symptoms. They have also been used as "performance enhancers" by musicians and performers to overcome performance anxiety, stage fright, and tremors during performances and auditions. Beta blockers have been banned from use during Olympic competitions by the World Anti-Doping Agency of the International Olympic Committee (World Anti-Doping Agency, 2006). Results about the effectiveness of beta blockers in the treatment of panic disorder with agoraphobia have been inconsistent (Bandelow, Röthemeyer, Sievert, Hajak, & Rüther, 1996). Beta blockers have not been found effective for treating generalized social anxiety disorder but have demonstrated effectiveness for performance anxiety in some studies (Brunello et al., 2000; Griest, Katzelnick, Jefferson, & Kobak, 1996; Schneier, 2006). One study showed that propranolol reduced severe cocaine withdrawal symptoms and was associated with better treatment retention (Kampman et al., 2001). Atenolol and propranolol have been associated with decreased cravings during alcohol withdrawal, but their use may also mask impending delirium (Kosten & O'Connor, 2003; O'Connor & Schottenfeld, 1998).

Side effects of beta blockers may include nausea, diarrhea, muscle cramps, bronchospasm, dyspnea (shortness of breath), cold extremities, hypotension (low blood pressure), low heart rate, fatigue, dizziness, difficulty concentrating, insomnia, depression, nightmares, and sexual dysfunction. Beta blockers are contraindicated in people with asthma. Beta blockers should not be taken during pregnancy without first consulting a physician about possible risks to the fetus (Magee & Duley, 2003).

See also amygdyla, anxiety, Anxiety Disorders Association of American, anxiolytic, fear, generalized anxiety disorder, neurotransmitter, panic disorder, phobia, Valium.

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Bibliotherapy

Bibliotherapy comes from the Greek words *biblio* (papyrus roll or book) and *therapeia* (curing, healing). Bibliotherapy involves the use of books or other media to help people express emotions, gain insight, or find appropriate solutions to problems. Trained helpers and laypeople use both fiction and nonfiction books to help people address issues through bibliotherapy.

The healing and restorative powers of reading have been long known. An epigraph inscribed on the library at Alexandria around 300 BC read "medicine for the mind," while the Greek library at Thebes was dedicated to the "healing of the soul." Records of books being prescribed as treatment appear as early as 1272, when patients at the Al-Mansur Hospital in Cairo were prescribed readings from the Koran. Throughout the 18th century, libraries were established in psychiatric hospitals throughout Europe. In 1802, Dr. Benjamin Rush was one of the earliest Americans to recommend reading as part of a patient's treatment plan. In 1846, Dr. John Minson Galt (1744–1888) published one of the earliest articles on the use of books for treatment. The term *bibliotherapy* was first used by Reverend Samuel McChord Crothers in the *Atlantic Monthly* in 1916. The earliest definition of bibliotherapy appeared in the 1941 edition of *Dorland's Illustrated Medical Dictionary* (Jack & Ronan, 2008). Early in the 20th century, bibliotherapy was prescribed as calming reading material or diversions to treat World War I veterans and patients in sanitariums. In the 1930s, psychiatrist William Menninger established an experimental clinical bibliotherapy program at the Menninger Institute in Topeka, Kansas. Mental hygiene literature was prescribed for patient education, recreation, encouragement, and to integrate patients into therapeutic reading groups (Dysart-Gale, 2008).

Developmental bibliotherapy deals with common developmental issues and situations, while *clinical bibliotherapy* addresses more serious mental health concerns. Bibliotherapy may be a means of increasing client engagement in the therapeutic process or of promoting clients taking more responsibility for their own healing. It can be used for psychoeducation (to teach about a specific condition or situation, e.g.,

depression or divorce), to promote creativity, for emotional release, to teach social skills or values, and to treat various mental health symptoms and disorders. Bibliotherapy may be a useful part of therapy when dealing with various issues, including depression, anxiety, grief or bereavement, abuse, alcoholism or substance abuse, family issues, marital issues/intimacy, divorce, coping with chronic medical issues, or disability. It may be recommended by a mental health therapist to encourage self-help, enhance therapy sessions, or in response to client requests for reading material. Bibliotherapy may be a cost-effective and efficient way to provide therapy. For example, it may be useful in rural areas or other areas with limited access to mental health resources (Adams & Pitre, 2000).

Books have been prescribed as calming reading material or diversions for patients in hospitals or institutions. They have also been prescribed as a means for clients to identify with the main characters of stories, release emotions, help to normalize their feelings or situations, develop coping strategies and problem-solving skills, promote new ways of interacting, or give a new direction or meaning in life (Gladding & Gladding, 1991). Bibliotherapy has been used to treat various populations (e.g., children and adolescents, senior citizens, people with disabilities) and settings (e.g., schools, mental health institutions). It can be used by teachers, school counselors, and school psychologists to help children deal with bullying, learn social skills, or contend with learning disabilities.

Early on, librarians took an active role in prescribing reading materials for patients in hospitals and institutions. Starting in the 1930s, physicians attempted to exert more control over the bibliotherapeutic process, regarding the role of librarians as that of assistants to physicians. Physicians wanted to maintain control over the entire process, from choice of reading material prescribed to evaluation of results. Effectiveness of the therapy was impressionistic and was mostly assessed through case studies. By the 1950s, bibliotherapy was no longer the sole realm of physicians. Bibliotherapy is used by mental health counselors, therapists, psychologists, psychiatrists, nurses, social workers, librarians, teachers, and parents.

Questions have been raised about lack of training of bibliotherapists, lack of rigor in implementation and assessment of bibliotherapy, and the effectiveness of bibliotherapy. Bibliotherapy has been widely used but poorly researched, with concerns about the methodology and conclusions drawn by bibliotherapy research. Different researchers have reached conflicting conclusions about the appropriateness, efficacy, and risks of bibliotherapy (Dysart-Gale, 2008). Many books recommended by therapists promote therapeutic techniques that are not evidence based. Therapists should evaluate books (and any techniques or claims without empirical support) carefully before making recommendations.

While bibliotherapy can be prescribed in a self-help modality, some bibliotherapists state that it should be guided (with a trained therapist or counselor or as an adjunct to other types of therapy). Interpreting reading with the help of a therapist may involve activities such as journaling, group discussion, art therapy, or role-play. Bibliotherapy may be a part of a program of cognitive-behavior therapy. It is crucial that therapists monitor clients' perceptions and reactions to recommended books to see if they are helpful or at least ensure that recommended books are not harmful (Adams & Pitre, 2000).

See also anxiety, depression, g

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Bibliotherapy Bookshelf: http://www.carnegielibrary.org/kids/books/bibtherapy.cfm

Bibliotherapy Education Project (University of Nevada, Las Vegas) Web site: http://www.library.unlv.edu/faculty/research/bibliotherapy/

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Biofeedback

Biofeedback, developed in the 1960s, involves using devices to amplify and provide feedback to an individual about the body's physiological processes. An individual undergoing biofeedback training is guided through a series of relaxation, breathing, or visualization techniques while receiving visual or auditory feedback from biofeedback devices to gain conscious awareness of and control over typically unconscious autonomic physiological states. Biofeedback devices are used to monitor physiologic processes including body temperature (using a thermistor or feedback thermometer), muscle tension (electromyography, or EMG), blood pressure, heart rate or peripheral blood flow (photoplethysmograph), blood gases (capnometer), breathing patterns (pneumograph), and perspiration (electrodermograph or galvanic skin response). Neurofeedback provides information about brain waves through the use of electroencephalograph (EEG) and neural activity using hemoencephalography (HEG).

Joe Kamiya of the Langley-Porter Institute in San Francisco puts electrodes on Joanne Gardner for an alpha-wave biofeedback experiment in the 1960s. These devices are used to monitor physiologic processes including body temperature, muscle tension, blood pressure, heart rate or peripheral blood flow, blood gases, breathing patterns, and perspiration. (Ted Streshinsky/Corbis)

Mind-body medicine is a holistic approach to healing based on interactions between the brain, mind, body, and behavior focusing on the ways spiritual, emotional, mental, and behavioral factors can influence physical health. Biofeedback is one tool used in mind-body

techniques used to teach people how to decrease their level of stress or muscular tension, change breathing patterns, or modify their emotional state. Other mind-body therapies include relaxation training, cognitive-behavioral therapy, hypnosis, visual imagery, yoga, tai chi, qi gong, and meditation. Research has shown that learning to consciously control autonomic processes using mind-body techniques can sometimes decrease the severity of physical issues such as asthma, hypertension, and various stress-related disorders (Astin, Shapiro, Eisenberg, & Forys, 2003). Biofeedback has been used to treat pain disorders (including headache, migraines, fibromyalgia, back pain, and chronic pain) and to alleviate symptoms associated with cancer and chemotherapy (e.g., Sherman, 2004). In addition to treating issues primarily regarded as physical, biofeedback has demonstrated efficacy in treating some cases of attention-deficit hyperactivity disorder (ADHD or ADD; Friel, 2007), substance abuse disorders (e.g., Scott, Kaiser, Othmer, & Sideroff, 2005), and some types of anxiety (Reed & Saslow, 1980). More research is needed to establish the effectiveness of biofeedback treatment for eating disorders (Pop-Jordanova, 2000) and test anxiety (Reed & Saslow, 1980).

See also complementary and alternative medicine, deep breathing, electroencephalography, galvanic skin response, meditation, mood ring, stress.

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Biodots (also known as stress dots) are made of heat-sensitive self-adhesive material that is attached to the skin. Biodots, which change color in response to changes in surface skin temperature, are used as a type of biofeedback to help control stress. Mood rings (which emerged in the 1970s) were a precursor of biodots.

Bipolar Disorder

Bipolar disorder was originally termed *manic depression* by Emil Kraepelin, a German psychiatrist who described the disorder in [illegible] Lagasse, 2008). Bipolar

disorder is a cyclical condition, typically involving periods of clinical depression alternating with episodes of mania or hypomania (which can include, among other things, expansive, elevated, or irritable mood; decreased need for sleep; and/or risk-taking behavior). Kraepelin recognized that manic depression takes different forms. Likewise, in the modern diagnostic system, different types of bipolar disorder are recognized (Preston, O'Neal, & Talaga, 2008). The bipolar disorders described in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), sometimes termed the *bipolar spectrum*, consist of bipolar I, bipolar II, cyclothymic disorder, and bipolar disorder not otherwise specified (NOS). *Bipolar I* is usually characterized by one or more manic or mixed episodes (when depression and mania occur simultaneously), while *bipolar II* is characterized by one or more major depressive episodes accompanied by at least one hypomanic (lower-grade mania) episode. *Cyclothymic disorder* is characterized by many periods of hypomanic symptoms (that do not meet the criteria for manic episodes) and depressive symptoms (that do not meet the criteria for major depressive episodes). If there is very rapid cycling, or alternating, of manic and depressive symptoms that do not meet the duration criteria for manic or depressive episodes, a diagnosis of *bipolar disorder NOS* is assigned (American Psychiatric Association, 2000).

Manic episodes (or mania) are described as distinct periods of time (usually at least one week) marked by abnormally and persistent expansive, elevated, or irritable mood, which may be accompanied by grandiosity (an inflated sense of self involving feelings of superiority or importance), decreased need for sleep, pressured speech, flight of ideas, increased involvement in goal-directed activities, excessive pleasure-seeking, and/or risk-taking behaviors. Hypomania is a milder form of mania causing less severe functional impairment and not requiring hospitalization. Hypomania may be marked by increased productivity and creativity and is not accompanied by the psychosis (e.g., delusions or hallucinations) that may accompany full-blown mania (American Psychiatric Association, 2000). A hypomanic episode may be preceded by or follow a major depressive episode or may presage an eventual manic episode. When prominent depressive and manic symptoms occur simultaneously for at least a week, the episode is considered mixed. In mixed episodes, mood may shift rapidly, and the episode may be prolonged and exacerbated by increase in the use of alcohol or stimulants (American Psychiatric Association, 2000).

Bipolar disorder has a different presentation in adults, adolescents, and children. The marked mood changes recognizable in adults may present as irritability, hostility, aggression, and/or inattention in children. Bipolar disorder can be misdiagnosed as borderline personality disorder (in adults) and as attention-deficit hyperactivity disorder (ADHD) or a conduct/behavior disorder (e.g., oppositional defiant disorder or conduct disorder) in children. Bipolar disorder may be comorbid with ADHD and is often comorbid with substance abuse (especially in adolescents and adults). It is important to distinguish between substance-induced mood symptoms and substance abuse disorder associated with bipolar disorder. It can be difficult to distinguish between bipolar disorder and schizoaffective disorder or other major mood disorders (e.g., major depressive disorder). While psychotic symptoms may be present in both schizophrenia and bipolar disorder, schizophrenia does not have the primary mood symptoms that are associated with psychosis in bipolar disorder. When diagnosing bipolar disorder, it is important to rule out medical conditions such as

thyroid disease or other metabolic disorders, infectious diseases such as encephalitis, seizure disorders, brain tumor, or stroke—that can cause symptoms that present similarly as bipolar disorder.

Estimates of the lifetime prevalence of bipolar I in community samples range from 0.4 to 1.6 percent (American Psychiatric Association, 2000), while the incidence of bipolar II ranges from 0.5 to 5 percent (Benazzi, 2007). The average age of onset for a first manic episode is the mid-twenties, although some cases emerge in childhood or adolescence, while others do not appear until after 50 years of age (American Psychiatric Association, 2000; Preston et al., 2008). Bipolar I occurs equally in males and females, while twice as many women as men are diagnosed with bipolar II. The first episode is usually mania in men and depression in women (Preston et al., 2008); rapid cycling is more common in women than men (American Psychiatric Association, 2000). Estimates of suicide rate in individuals with bipolar disorder vary from 10 to 20 percent (American Psychiatric Association, 2000; Preston et al., 2008). There are more individuals with bipolar disorder from higher socioeconomic groups and with higher levels of education (Preston et al., 2008). Individuals with bipolar disorder have elevated rates of first-degree biological relatives with a history of a major mood disorder (bipolar I, bipolar II, or major depressive disorder).

Theories about the causes of bipolar disorder mainly focus on neurobiology and genetic transmission, although other areas (such as environmental factors) have been explored. From the 1970s through the 1990s, neurobiological research focused on neurotransmitters (substances that modulate brain function and influence mood, e.g., serotonin and dopamine), synaptic activity (i.e., transmission of messages between neurons), cell membrane function, and second messenger systems. Research in the late 1990s expanded to include molecular and cellular processes, neuroplasticity (changes in brain organization as a result of experience), and signaling networks (neural connection patterns). These include theories involving catecholamines (the neurotransmitters dopamine, epinephrine, and norepinephrine), the HPA axis (the hypothalamic-pituitary-adrenal axis of the brain that controls reactions to stress and regulates many bodily processes), and genetic and familial theories (Preston et al., 2008).

Lithium's antimanic effects were discovered in 1949 but did not gain acceptance as a treatment for bipolar disorder in the United States until 1970 because of concerns about toxicity (Preston et al., 2008). Lithium is currently viewed as a safe and effective treatment for bipolar disorder, along with other anticonvulsant mood stabilizers, especially carbamazepine (Tegretol or Equetro), divalproex (Depakote), and lamotrigine (Lamictal). Lithium and the anticonvulsant mood stabilizers can have side effects, and therapeutic levels must be monitored periodically through blood tests to prevent toxicity. Alternative or adjunctive treatments for bipolar disorder include newer anticonvulsants, some antipsychotics, some antidepressants, and antianxiety agents, often used in combinations to target specific constellations of symptoms. The use of antidepressants to treat depression in bipolar disorder is controversial; some studies claim that antidepressants can trigger manic episodes or induce rapid cycling, while other sources claim there is no evidence to support this (American Psychiatric Association, 2000). Medication treatment of bipolar disorder is generally long term because of the relapsing nature of the disease. Many

practitioners consider a combination of psychotherapy and medication to be the optimal treatment for bipolar disorder (Miklowitz & Alloy, 1999; Olson & Pacheco, 2005; Preston et al., 2008). Other treatments for bipolar disorder include education about the disorder, family therapy, group therapy, and individual therapy.

Bipolar disorder can have serious adverse effects on employment, education (especially in children), and relationships and can be associated with increased levels of alcohol or other substance abuse, violent or abusive behavior, or episodic antisocial behavior. Onset of bipolar disorder at a young age can increase the severity of the disorder; repeated occurrences of severe episodes (mania and/or depression) can worsen prognosis, so early treatment is essential.

See also antimanic, lithium therapy, mood stabilizer, neurotransmitter.

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Bipolar disorder affects approximately 5.7 million American adults, or about 2.6 percent of the U.S. population aged 18 and older in a given year. The median age of onset for bipolar disorders is 25 years.

Source: National Institute of Mental Health, 2009. Available at: http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml#Bipolar

Birth Trauma

Otto Rank (1884–1939), in his book *The Trauma of Birth* (1929/1994), argued that the primary cause of all anxiety in humans is the trauma of the birth experience. Rank was a psychoanalyst born in Austria and mentored by Austrian psychoanalyst Sigmund Freud.

With birth, the individual is thrown into a new type of existence as an isolated individual, an entity separated from the whole. The anxiety commonly associated with this new way of being is unsettling, even terrifying. As personality development progresses

becomes compounded by a new fear. The individual has established individuality and is terrified of losing that as well; death anxiety develops, a fear of being absorbed back into the whole. For many people, life experience consists of alternating between these two anxieties: the fear of life (becoming separated from others, becoming an individual) and the fear of death (loss of individuality, forced union). In *The Trauma of Birth*, Rank showed how art, myth, religion, and philosophy and therapy can be understood through the lens of birth trauma.

In a later book, Rank wrote that these contradictory fears can be reconciled through engagement with art and through love, both of which can be transcendent experiences (Rank, 1929/1994). Living completely involves seeking both isolation and union, without falling prey to the vacillation that leads to angst and alienation.

Freud agreed that birth trauma can be a cause of anxiety but disagreed with the significance that Rank placed on it. According to Freud, the source of anxiety typically lies with the oedipal complex that very young children experience between the ages of about three and six, the "family romance" in which children become erotically attracted to the opposite-sexed parent (typically) and feel intense hostility toward the same-sexed parent. Prior to the publication of *The Trauma of Birth*, Freud and Rank had an intensely intimate friendship, with the older Freud treating the younger Rank as a son. Their friendship began to fail around this time, at least partly due to the disagreements they had about the origin of anxiety (Roazen, 1974). The two men had no further contact after a few years.

Rank made other significant contributions to the history of psychotherapy and personality theory. Of note is the influence he had on the humanistic and existential psychotherapists. Rank wrote about the importance of emotional experience, both inside and outside of psychotherapy, and of the importance of living in the present, the "here and now." Eminent American psychologist Carl Rogers said that his emphasis on responding to the feelings of the client in psychotherapy came from the influence of Otto Rank and his followers (Rogers, as cited in Hart & Tomlinson, 1970).

See also anxiety, existential psychotherapy, Sigmund Freud, humanistic psychotherapy, psychoanalytic perspective, Carl Rogers.

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Blunted Affect

An affect is an automatic, physiological response to a stimulus and includes a basic evaluation of the stimulus as good or bad. Startle, surprise, and stun responses are all examples of affects (affective responses). Affects occur as reflexes to stimuli.

In some individuals, and as a symptom in some disorders, affect or immediate emotional response is said to be blunted. This means that the individual appears unemotional, although not necessarily the level of what is called flat, which is absolutely no emotional response. Usually blunted affect is determined by observing facial expressions and body language. Thus the person who is demonstrating blunted affect is expressionless or nearly expressionless when, typically, some type of affective response would be expected. For instance, if a person is told that his house just burned down or that his first grandchild was just born and he responds with a blank or nearly blank expression (but not a shocked expression, simply blank), these are examples of blunted affect.

In the realm of mental disorders, blunted affect or the more extreme flat affect most commonly occurs in the mood disorders (depressions and bipolar disorders), posttraumatic stress disorder, schizophrenia, and the two personality disorders that possess some symptom overlap with schizophrenia—schizoid personality disorder and schizotypical personality disorder.

See also affect, bipolar disorder, depression, endogenous depression, major depressive disorder, posttraumatic stress disorder, schizophrenia.

Body Language

Body language is a type of nonverbal communication. It includes such things as facial expressions, eye movement, gestures, body posture, and body movement. Communication consists of verbal information (the words themselves), paralinguistic cues (including tone and inflection, known as *prosody*), and body language. Body language can communicate information about a person's attitude, state of mind, or intentions. Body language can signal many things, including tension, boredom, threat, frustration, attention, sexual interest, submission, and social position.

Specific body movements often have multiple meanings, which may vary by culture, gender, social status, age, and context (the situation). People learn through experience to interpret body movements. For example, crossing one's arms across the chest may signal an unconscious barrier or opposition. However, it can also mean that one is cold. Likewise, shivering could indicate either being cold or feelings of fear. Eye movement and position (e.g., gaze, eye contact) should be interpreted within the context of gender, culture, and social status. In some cultures it is considered polite to make direct eye contact, while other cultures consider this rude. There is a subtle distinction between making eye contact and staring (which may be considered rude). Rolling the eyes may indicate exasperation, boredom, or disdain (especially with teenagers). Looking away from someone while they are speaking may be considered impolite or signal disinterest. Looking upward may indicate that a person is thinking or remembering, while looking down may indicate depression, dejection, or submission. Blinking, flinching, and winking can communicate information about a person's mood or intentions.

Distance between people—known as personal space—varies significantly by culture, gender, and social status. Differing conceptions of appropriate personal space can be a source of misunderstanding between people. For example, an American man may feel crowded if another man stands very close; in another culture, standing close together might be considered a sign of friendship. Touching and eye contact

may indicate intimacy, friendship, or respect, depending on the cultures (and genders) of the people involved.

The study or interpretation of body language is known as *kinesics*. Some people claim that an individual's body language can provide information about whether she is concealing information or telling the truth. For example, a poker face is a blank expression that does not reveal information about a poker player's hand of cards. A tell is a subtle signal of body language that reveals information about someone's intentions. Body language interpretation is used to guide recommendations in marketing, jury selection, and management decisions. Body movements known as emblems and illustrators are a type of body language that vary from culture to culture. *Emblems* are movements that have a specific verbal meaning (e.g., nodding or shaking the head to indicate yes or no). *Illustrators* are closely tied to speech; they may punctuate speech or help explain what is being said (e.g., talking with one's hands; LeDoux, 1996).

Conditions that may impair the ability to interpret (or appropriately express) body language include schizophrenia, depression, autistic spectrum disorders (ASD), traumatic brain injury (TBI), and Huntington's disease. Individuals with ASD may make limited eye contact. Theories about why eye gaze is avoided include to minimize sensory overstimulation, that it is not rewarding (reinforcing) to make eye contact, and that the connections among brain structures differ in individuals with ASD, making it difficult to make eye contact and to develop other socially adaptive behaviors (Senju & Johnson, 2009). The body language of individuals with schizophrenia and depression may not match the emotions they report feeling (Flack, Laird, & Cavallaro, 1999). Individuals with schizophrenia, ASD, and TBI may have difficulty interpreting others' body language (Watts & Douglas, 2006). Huntington's disease is a neurological disorder that affects motor abilities. It also affects the ability to recognize emotional expressions, including facial expressions of disgust and angry body postures. There may be a link between the ability to produce body movements and the ability to interpret the emotional meaning of others' body movements (de Gelder, Van den Stock, de Diego Balaguer, & Bachoud-Levi, 2008).

Kinematics is the study of movement. There is a relationship between body position and emotional experience. In an experiment by Niedenthal (2007), two groups of people received news about earning a good score on an achievement test. Those participants who were sitting with slumped head and shoulders felt less proud, on average, than participants who were sitting upright. In another experiment, participants were induced to nod their heads in agreement or shake their heads in disagreement in response to questions. While participants were answering the questions, the experimenter placed a pen on the table in front of them. Later, another experimenter offered participants the pen that had been on the table or a different pen. Those participants who had nodded their heads in agreement during questioning preferred the pen that was on the table, while those who had shaken their heads in disagreement preferred the new pen. In these experiments, it appeared that participants engaging in positive body positions or movements responded more favorably or experienced more positive emotions than those who had engaged in negative body movements (Niedenthal, 2007).

See also autistic spectrum disor[illegible] emotional expr[illegible] facial expression, nonverbal expression, prosody, univ[illegible] ign[illegible] expression.

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Borderline Personality Disorder

People with borderline personality disorder (BPD) exhibit persistent instability in mood, interpersonal relationships, and self-image and engage in frequent impulsive behavior. These characteristics largely deteriorate one's personal, social, and occupational functioning. People with BPD have emotional lability (mood swings) accompanied by episodes of anger, depression, and anxiety, lasting anywhere from a few hours to a few days; they are also prone to physical aggression and impulsivity. They tend to direct their anger inward, leading to a high rate of self-injury. Self-destructive behaviors in individuals with BPD include substance abuse (e.g., drugs or alcohol), binge eating, unsafe sex, reckless driving, and self-cutting. Past research indicates that 60 to 80 percent of people with BPD have attempted suicide at least once in their life time, while 10 percent of them die of suicide (James & Taylor, 2008). Risk factors for people with BPD completing suicide include those with comorbid major depressive disorder, antisocial personality disorder, those who are older with children, have less education, and have a family history of substance use (Soloff, Fabio, Kelly, Malone, & Mann, 2005). Many of those with BPD suffer from deep feelings of emptiness, boredom, and confusion about their identity.

Many people may be misdiagnosed with BPD, especially adolescents or young adults who use psychoactive substances (e.g., drugs or alcohol) or have identity problems. These individuals may temporarily display behaviors associated with BPD. According to the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000), a description of mental health disorders used primarily in the United States, women account for about 75 percent of the patients diagnosed with BPD. The frequency of BDP is higher than that of schizophrenia or bipolar disorder (manic depression), though BDP is less familiar than these other disorders. BPD is estimated to occur in about 2 percent of the general population, in about 10 percent of people seen in outpatient mental health clinics, and about 20 percent of psychiatric inpatients (American Psychiatric Association, 2000). Individuals differ in the course of the disorder. However, commonly, the instability and the risk of suicide reach their peak during young adulthood and, as people get older, seem to decrease.

People with BPD usually form unstable relationships with others. They often develop intense attachments to others even if their feelings are not mutual. Since people with BPD are highly sensitive of rejection, they tend to display intense anger when their relationship is different from their expectations. Typically, they experience increased distress during short-term separations from others. Self-destructive behaviors take place along with these disappointments and the fears of rejection. In addition, impulsive behaviors such as drinking a large amount of alcohol and binge eating are common in BPD.

Past studies suggest that both environmental and biological factors contribute to the onset of BPD. Many people with BPD report that as young children, they were neglected or rejected by their parents. Additionally, people with BPD often report an unstable childhood environment that may involve witnessing violence or physical or sexual abuse (Sansone, Songer, & Miller, 2005). Biological characteristics associated with BPD include lower serotonin (a chemical messenger in the brain) activity, which has been found in people with BPD who exhibit high impulsivity (Norra et al., 2003). One way of viewing BPD is through a *biosocial model* (Linehan, Cochran, & Kehrer, 2001). First, an internal factor, such as difficulty identifying and controlling one's emotions or abnormal serotonin activity, may create vulnerability, then social factors contribute to development of the disorder. For instance, parents may interpret a child's intense emotionality as overdramatization or an attempt to manipulate, then may punish or trivialize the emotions of the child. The child then devalues or doubts his own emotions and never learns how to recognize and cope with intense emotional reactions.

Group and individual psychotherapy are commonly used as treatments for BPD. In recent years, dialectical behavioral therapy has been used to treat BPD, and it receives more empirical support than any other treatment (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). Dialectical behavior therapy involves a combination of cognitive and behavioral techniques and humanistic philosophy. The therapist plays a supportive role, listening and empathizing. She identifies the accurate perceptions of the client and helps the client to think about alternative ways of viewing situations and of responding emotionally to particular events. Social skills training may also be involved, sometimes in group therapy settings, where clients can learn new ways of interacting with others.

Antidepressant, mood-stabilizing, antianxiety, and antipsychotic drugs are also sometimes used to treat people with BDP, although medication treatment is controversial given the high rate of suicide attempts among those suffering from BPD. Over the past two to three decades, treatments for BPD have improved, and many sufferers can live productive lives.

See also depression, lability (emotional), personality disorder.

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- Approximately 30 to 40 percent of suicides are committed by people with personality disorders; individuals with borderline and antisocial personality disorders account for a large majority of these. Two-thirds of individuals who commit suicide have a diagnosable substance abuse disorder (James & Taylor, 2008).
- Outpatients with borderline personality disorder make an average of three suicide attempts during their lifetime (Soloff et al., 2005).
- *Girl, Interrupted* is an Academy Award–winning film adapted from the memoir by Susanna Kaysen. In the 1993 book, Kaysen relates her true experiences as a patient with borderline personality disorder in a psychiatric hospital in the 1960s.

Boredom

Boredom is an emotional state that occurs when an individual is uninterested in activities in which he is engaged. Boredom may also occur when an individual is inactive. Boredom is experienced as unpleasant and may be associated with strong negative emotions, including anxiety and depression.

A number of 19th- and 20th-century philosophers, such as Schopenhauer, Kierkegaard, Heidegger, and Fromm, discussed boredom in their writings. Heidegger considered boredom at length, describing it and expounding on causes and effects. In 1929 and 1930, in his lecture course *The Fundamental Concepts of Metaphysics*, he produced what amounts to about 100 pages on the subject. His primary example of a situation related to boredom was waiting at train stations (Heidegger, 1930/2001). As Heidegger further elaborated, when one's mind is unoccupied, one may encounter nothingness, the meaninglessness of life, and may experience anxiety and angst. Pursuing this line of thought can be truly [illegible]ful.

Boredom can be associated with serious psychological and social problems. For instance, a tendency to become bored is linked to depression, anxiety, and hostility (e.g., Vodanovich, Verner, & Gilbride, 1991). At least one study showed that boredom can be related to compulsive gambling (Blaszczynski, McConaghy, & Frankova, 1990).

Some theorists and researchers have discussed possible remedies for boredom. As Sansone and colleagues describe (e.g., Sansone & Smith, 2000; Sansone, Weir, Harpster, & Morgan, 1992), boredom can be decreased or possibly eliminated by increasing the challenge that the activity presents, testing an individual's skill and thereby increasing motivation. Since boredom may result in both unchallenging and overly challenging tasks, however, one has to be careful to create the proper level of challenge. A second way to decrease boredom is to add variety to a task that is repetitive, for instance, when cleaning the house, put on some music for a change and try cleaning in time to the music. A third method is to change the context mentally through fantasy. For instance, researchers Cordova and Lepper (1996) transformed a computer software program that teaches math to elementary students. They created two fantasy games: one was "Space Quest," a game that requires that students perform math operations to save Earth from aliens. Cordova and Lepper's study compared a standard method for teaching math through a computer software program to the "Space Quest" and other fantasy method and found that students who learned through a fantasy game learned math better than did the other students and were more likely to report that the computer program that they used was interesting and fun.

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John Bowlby (1907–1990)

British psychiatrist John Bowlby was well known for his study of child development and theories about attachment and loss. Bowlby proposed that attachment—the early bond between a baby and its primary caregiver, parents and others who

care for the baby)—sets the stage for future emotional relationships, especially intimate relationships. When first introduced, attachment theory was controversial. By the 1980s, attachment theory became a dominant principle of social and personality development, changing the way people thought about the importance of close relationships (Hazan, 2009).

Bowlby was born in England to a middle-class family; his father was a surgeon. Some have speculated that Bowlby's own early childhood experiences—having distant and emotionally unavailable parents and being sent off to boarding school at a young age—influenced his explorations into separation and attachment (Karen, 1994).

Bowlby graduated from Cambridge University in 1928 and trained as a child psychiatrist at the British Psychoanalytic Institute. His training was in a new version of Freudian psychoanalysis, an object-relations approach that taught that emotional disturbance in children was a result of fantasies generated by internal conflict. Bowlby felt that this approach failed to consider children's actual early experiences with their parents. After World War II, Bowlby became head of the children's department at the Tavistock Clinic in London. There he focused his clinical studies on investigating the effects of mother-child separation. His work for the World Health Organization on the fate of homeless children, and the ensuing film *A Two-Year-Old Goes to the Hospital*, highlighted the potentially devastating effects of maternal separation and led to more liberal family visiting privileges for hospitalized children. He rejected the psychoanalytic notion that children's love for their mothers was due to oral gratification. Instead, he embraced ethological (animal behavior) theories that explained mother-child attachment in terms of an evolutionary basis (Hazan, 2009).

Bowlby convened a series of symposia, the Tavistock study group on mother-infant interaction, a series of four meetings held every two years at the Ciba Foundation in London between 1959 and 1965. This was a meeting of a small group of researchers from different countries and different disciplines (e.g., psychology, animal behavior, ethology, learning theorists) to promote knowledge of the subject matter (mother-infant interaction) and enhance a mutual understanding of each others' work and views (van der Horst & LeRoy, 2008). Participants of the Ciba symposia included Mary Ainsworth and Harry Harlow. Mary Ainsworth (1913–1999) was an American developmental psychologist who also explored attachment in children. Ainsworth looked at individual differences in attachment as well as differences across cultures. Harry Harlow (1905–1981) was an American psychologist and ethologist whose experiments on rhesus monkeys at University of Wisconsin investigated maternal separation and social isolation. Bowlby collaborated with both Ainsworth and Harlow throughout his career. Bowlby and Harlow maintained scientific and personal contact from 1957 until Harlow's retirement in 1974 (van der Horst & LeRoy, 2008)

In 1961, Bowlby described three stages of grief based on young children's reactions to separation from parents—protest, despair, and detachment. Later he added a fourth stage and refined his theory to apply to grieving in adults: numbness and disbelief, yearning and searching, disorganization and despair, and finally reorganization or recovery from bereavement (Archer, 1999). Between 1968 and 1980, he published a three-volume series on attachment and loss.

Bowlby retired in 1972. Shortly before he died of a stroke in 1990, he published a book about Charles Darwin. He was survived by his wife, Ursula, four children, and seven grandchildren (Ainsworth, 1992).

See also Mary D. Salter Ainsworth, attachment, family, grief, Harry Harlow, loss.

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Buddhism

The man known as Buddha lived long ago, in the 6th century BC, but the wisdom behind his general life philosophy and his attitude toward human emotions in particular has stood the test of time. According to Buddha, the key to experiencing a fulfilling life is to develop perspectives, attitudes, and practices that ultimately lead to cultivating positive personal qualities and emotions and to the elimination of negative personal qualities and emotions.

A fundamental truth of life, according to Buddhism, is that life is constant change. We are born, we age, and we die. We experience joy, then sorrow, then joy again. Pain follows happiness and happiness follows pain as surely as sunset follows sunrise. However, people have trouble accepting this fundamental truth. A second fundamental truth is that people crave security, certainty, stability, and permanence, despite the fact of constant change. From the Buddhist perspective, it is this craving, called *attachment* or *grasping*, that causes our unhappiness. We become attached to whatever brings pleasure and stability, hoping that these objects or situations will bring a permanent end to anxiety and other pain. We suffer when we do not get what we want, and we suffer from fear of losing what we have and love. We attempt to control life so that we will experience only pleasure and avoid suffering, but it is these attempts at control that primarily cause our pain.

Buddhism offers two solutions to the causes of our suffering: awareness and detachment. By achieving awareness and detachment, we bring about acceptance of the reality that life is change. Meditation aids in the fostering of both awareness, which includes a focus on both the inner self and external reality, and detachment. Detachment means letting go, allowing circumstances and the world around one

to "just happen," without attempting to manipulate them. Detachment and awareness become intertwined; with detachment one is open to experiencing each moment, and this is awareness of each moment. One allows one moment to flow into the next.

When one reaches a certain level of awareness and detachment, grasping is no longer a problem. Awareness and detachment are now the attitudes toward one's life. One has let go of one's needs and desires that are based in worry, greed, delusion, and other negative emotions or attitudes. This is Nirvana, and positive emotions naturally flow into the person. Nirvana means "extinction of thirst" or "absence of desire" (Rahula, 1974, p. 32) and, in more positive terms, means one is joyful and peaceful, filled with compassion, kindness, tolerance, and universal love (Rahula, 1974). Achieving Nirvana also means achieving enlightenment. The path toward enlightenment involves working toward eight specific attributes of mind and behavior. Three of these involve developing meditation skills (right effort, concentration, and mindfulness), two relate to wisdom (right thinking and understanding), and three are concerned with ethical behavior (right speech, action, and livelihood).

If one truly achieves enlightenment, one's personality has become permanently transformed; some share of one's negative personality traits has permanently disappeared. As Daniel Goleman (1975) described, if the eight qualities in the path toward enlightenment are all developed fully, unhealthy mental qualities are eliminated completely and replaced by healthy mental qualities. A person who has achieved this state is called an *arhat*.

In sum, in Buddhism, happiness and contentment in life come from following the path toward enlightenment, which involves cultivating eight qualities of mind and behavior. A significant part of the path means practicing meditation, which brings about attitudes of awareness and detachment. The individual learns not to grasp for stability and permanence and instead finds that happiness is present in the moment.

See also acceptance, meditation, mindfulness.

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- Nirvana is based on the Sanskrit word *nirva*, translated as "to blow out" or "to be extinguished." Nirvana is the state of perfect peace and bliss, achieved when the mind is free from cravings and strong negative emotions. Nirvana is the supreme goal of the serious Buddhist.

- Kurt Cobain chose Nirvana as the name of his band because he "wanted a name that was kind of beautiful or nice and pretty instead of a mean, raunchy punk rock name like the Angry Samoans" (Azerrad, 1993, p. 62).

Burnout

Burnout is a psychological syndrome involving a prolonged response to chronic interpersonal stressors. It is a state of exhaustion and diminished interest, usually in one's occupation, but it can also apply to other emotionally involving work such as caretaking (e.g., caring for a person with a severe disability or illness). Burnout was originally described in the 1970s by American psychologists Christina Maslach and Susan E. Jackson. They developed the Maslach Burnout Inventory (Maslach & Jackson, 1981), which assesses three dimensions of burnout: emotional exhaustion, depersonalization, and inefficacy (a reduced sense of personal accomplishment). Especially prevalent among workers who do "people-work" (e.g., caregivers and helping professionals), *emotional exhaustion* refers to the depletion of one's emotional resources, the feeling that one has nothing left to give to others at a psychological level. *Depersonalization* is the development of negative and callous attitudes about the people with whom one works; this can lead workers to view their clients as somehow deserving of their troubles. There is a relationship between the three dimensions, with exhaustion predicting cynicism, which can lead to inefficacy (Leiter & Maslach, 2009b). Conditions that can contribute to employee burnout include unrealistic personal expectations about the job as well as lack of positive feedback, control, role clarity (job expectations), and social support. Burnout has been linked to employee turnover, absenteeism, poor work performance, and difficulties with health and personal relationships (Maslach & Jackson, 1985). A 10-year study of hospital admissions among forest workers in Finland found links between burnout and higher levels of hospitalization for cardiovascular and mental health disorders (Toppinen-Tanner, Ahola, Koskinen, & Väänänen, 2009). Studies in Greece and the Netherlands found that burnout can spill over from an employee experiencing work-related burnout to the employee's partner. Employee burnout is associated with higher levels of poor health and depression in the employee's partner (Bakker, 2009).

A two-year-long study by Maslach and Michael Leiter looking at the implications of burnout on workplace safety found that workload and level of exhaustion predicted the incidence of workplace injuries. They posited that workplace stress can impair job performance by impairing cognitive functioning and reducing a worker's capacity for complex physical skills. The study concluded that workplace accidents undermine the quality of work life by defining the workplace as unsafe and introducing doubts about an organization's concern for its employees (Leiter & Maslach, 2009a).

Leiter and Maslach (2009b) identify a continuum, with burnout at one end and engagement with one's job at the other. The quality of an individual's work experience can be captured by identifying an individual's position on this continuum.

They have found that individual functioning in six areas of work life can serve as predictors of burnout: workload, control, reward, community, fairness, and values. A study of emergency room nurses in Ankara, Turkey, found that nurses working in the private (as opposed to public) sector found it more difficult to express their anger; higher levels of unexpressed anger were associated with a greater degree of burnout (Ersoy-Kart, 2009).

A Turkish study of mothers caring for children with intellectual disabilities found that an intervention in which nurses provided psychoeducation to mothers reduced the incidence of burnout. The psychoeducational intervention included providing information about the specific health care and educational needs of children with intellectual disabilities, resources (e.g., nonprofit organizations that provide assistance to families), and ways in which parents could cope with stress. Mothers in the intervention group reported fewer episodes of burnout and emotional stress than a control group that received no intervention (Bilgin & Gozum, 2009). A study of workers who underwent interventions for burnout found that recovery from burnout was likelier to occur when there were decreased job demands and increased job resources. Recovery from burnout was associated with increased job satisfaction and decreased levels of depression (Hätinen et al., 2009).

An online survey found that physicians who specialize in hospice and palliative medicine utilize multiple strategies to prevent burnout. Strategies included maintaining physical well-being, professional relationships, talking with others, hobbies, clinical variety, personal relationships, personal boundaries, time away from work, and passion for one's work. The study concluded that a diverse portfolio of coping strategies is necessary to prevent burnout (Swetz, Harrington, Matsuyama, Shanafelt, & Lyckholm, 2009).

See also stress.

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C

Walter Cannon (1871–1945)

Walter Cannon was born in Prairie du Chien, Wisconsin, in 1871, the son of a railroad official (his father) and a high school teacher (his mother). His parents had intellectual interests and young Walter read widely. One of his high school teachers, Mary Jeannette Newsom, encouraged him and helped him to apply to Harvard University. He was accepted into Harvard and earned both his college and medical degrees there; his MD was awarded in 1900. Cannon immediately began working as an instructor in the Department of Physiology at Harvard Medical School and in 1906 became chair of that department. He remained in that position until 1942. In 1901, Cannon married Cornelia James, who wrote best-selling novels. They had five children, a son and four daughters. Cannon died in 1945 at age 74.

Cannon made a number of important scientific contributions. He was one of the first scientists to systematically study the physiology of emotion. Cannon's research on this topic led him to conclude that when an animal is strongly aroused, usually due to fear or rage, it produces what he called a *fight-or-flight response* (now also called the *stress response*), a full-body emergency reaction largely controlled by the activity of the sympathetic nervous system (a branch of the autonomic nervous system) and the release of the hormone adrenaline. Cannon (1915/1929) described his findings in his book *Bodily Changes in Pain, Hunger, Fear, and Rage*, published in 1915. Cannon also introduced a major theory of emotion called the Cannon-Bard theory, named for Cannon and his collaborator Philip Bard (Cannon, 1927). According to this theory, when an individual encounters a stimulus, the different elements of the resulting emotion, the physiological response, the cognition (thought), and the emotional feeling are produced simultaneously. Cannon and Bard's theory contradicted William James's earlier and influential theory, the James-Lange theory of emotion, which held that emotional feelings occur after cognitive appraisals and physiological responses. Cannon also developed the concept of *homeostasis*, the process by which body states are maintained at a steady level. Cannon coined the term, described the functionality, and presented data on the process of homeostasis.

Cannon was president of the American Physiological Society from 1914 to 1916. He was considered for the Nobel Prize several times but was never awarded one. He

was active politically, defending the right of scientists to utilize animals as research subjects and becoming a leader in the Medical Bureau to Aid Spanish Democracy, among other activist pursuits. Walter Cannon wrote an autobiography, *The Way of an Investigator* (1945). In 1994, his son Bradfield Cannon (who died in 2005) wrote an article in the *International Journal of Stress Management*, describing his father's contributions to science.

See also autonomic nervous system, Cannon-Bard theory of emotion, James-Lange theory of emotion, stress, stress hormones, sympathetic nervous system.

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When Cannon and his wife were on their honeymoon in 1901, they were the first nonnative people to reach the southwest peak of Goat Mountain in Glacier National Park. The peak was later named Mount Cannon.

Source: http://www.summitpost.org/mountain/rock/152331/mount-cannon-mt.html

Cannon-Bard Theory of Emotion

The Cannon-Bard theory of emotion was developed by American physiologists Walter Cannon and Phillip Bard in the early 1900s. The development of this theory was influenced by the James-Lange theory of emotion. James and Lange had stated that emotional feelings occur after physiological arousal occurs in response to a stimulus (Lange & James, 1922/1962). Although James and Lange did not explicitly state this, their theory suggested to some that different emotions are associated with different types of physiological arousal. Several decades after the James-Lange theory gained widespread acceptance, Cannon and Bard questioned the emotional mechanism suggested by the James-Lange theory and proposed some variation to it (Cannon, 1929). For instance, Cannon argued that many different emotions including happiness, sadness, and anger did not seem to be accompanied by similar arousal of the autonomic nervous system, the branch of the nervous system that controls

involuntary activity such as heart rate and hormone release). As an example, people's heart rates generally increase regardless of which emotion they are experiencing. This contradicted the implied principle of the James-Lange theory that different emotions are associated with different physiological responses. Cannon further suggested that physiological arousal alone can not produce emotional reactions. For example, people playing basketball might be experiencing little emotion even though their autonomic nervous systems are highly aroused.

What Cannon and Bard were proposing was that physiological arousal occurs with an emotion, as James and Lange stated, but that the brain is somewhat independently involved in causing the emotion by interpreting the situation (the stimulus) that caused the physiological arousal. For instance, suppose that you nearly missed having a car accident—you had to slam on your brakes to avoid hitting another car. In this situation, in the James-Lange theory, you would first have physiological arousal, *then* feel fear. According to the Cannon-Bard theory, you would experience physiological arousal and the brain would receive sensory input about the car crash *at the same time.* The brain would interpret the sensory input (not the physiological arousal per se) in order to determine the nature of the emotion that is felt.

A number of details of the Cannon-Bard theory are unsupported. For instance, it is possible to distinguish between different emotions based on their physiology (Cacioppo, Berntson, Larsen, Poehlmann, & Ito, 2000). Additionally, Cannon and Bard did not identify all the particular brain structures that are the most closely associated with emotion. Nevertheless, the Cannon-Bard theory has contributed to the development of theory of emotions by emphasizing the significant role of the brain in emotion. Their work played a part in initiating the neurological approach to studying emotion.

See also autonomic nervous system, Walter Cannon, James-Lange theory of emotion, physiology of emotion.

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Catathymia

The concept of catathymia was introduced in 1912 by Swiss psychiatrist Hans W. Maier. The term comes from the Greek *kata* (according to) and *thymos* (spirit or temper) and indicates a state of mind where emotions take control over a person's mental processes (Colman, 2001). Maier used catathymia to describe a psychological reaction or process activated by strong and persistent emotions that are connected to an underlying complex of ideas. When the emotions are stimulated, the individual's psychological balance is upset, disrupting logical thinking, sometimes resulting in delusions or hallucinations. In 1937, forensic psychiatrist Fredric W[illegible]n, who

organized the United States' first court clinic for convicted felons at Bellevue Hospital in New York, applied the term *catathymic crisis* to inexplicable acts of violence perpetrated against a victim with whom the perpetrator had had a long-standing relationship (Schlesinger, 2004). In the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III*; American Psychiatric Association, 1980), catathymia was described as an isolated explosive disorder. Catathymia is not included in the current edition of the *DSM-IV-TR* (American Psychiatric Association, 2000). In 1981, Revitch and Schlesinger described catathymia as a psychodynamic process with an acute and a chronic form (Schlesinger, 1996). The *acute* catathymic process, triggered by sudden overwhelming feelings attached to ideas with symbolic significance, can last several seconds or longer, the victim is usually a stranger, the violent outburst is usually followed by flattening of emotions, and memory of the violent events is usually poor. The *chronic* catathymic process is triggered by a buildup of tension and feelings of frustration, depression, and helplessness. The chronic catathymic process can last from days to years, the victim is usually a close acquaintance or family member of the perpetrator, the violent outburst is usually followed by a sense of relief, and memory of the violent event is usually preserved. The chronic catathymic process has three phases: incubation, the violent act, and relief. In 1992, J. R. Meloy posited that catathymic crises stem from attachment disorders or borderline or psychotic personalities (Schlesinger, 1996).

Catathymic amnesia, also known as episodic amnesia, refers to a loss of memory for a specific event, while memory for other events remains intact (Corsini, 1999). Catathymic amnesia may refer to general episodic amnesia, which can follow experiencing or witnessing of trauma, or to a specific amnesia following the commission of an act of violence—as in the case of acute catathymic homicide.

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Fredric Wertham's testimony was used in two well-known United States court cases in 1951: *Brown v. Board of Education* and the Rosenberg spy trial.

Catharsis

The term *catharsis* refers to an emotional release or purging. Catharsis is experienced in dramaturgical, religious, and psychotherapy contexts and may result in cleansing, balancing, or healing.

The term was first used by Aristotle and described the emotions that are felt at the conclusion of watching a tragedy. Individuals become so involved in watching a drama that very strong sentiments of sorrow, ecstasy, pity, or other emotions may be felt. According to Aristotle, the catharsis leads to a highly positive result: a restoration of one's emotional attitude. As an individual becomes involved in daily life, he or she may move toward an inappropriate emotionality or stoicism (an impassiveness, indifference to pleasure or pain), becoming emotionally unbalanced, in a sense. Watching drama and experiencing feelings vicariously through the characters leads to an equalizing of the emotions; one relearns how to feel emotions at appropriate levels.

Catharsis is also spiritual or religious. In this context, the emotion that requires release is guilt. Either expression of the guilt (e.g., through confession or atonement) or punishment for the guilt may lead to a catharsis. For example, in the 2007 film *Atonement*, a young girl's lie leads to the arrest and imprisonment of an innocent man (her sister's lover) for the rape of a minor. The man, who had had a bright future prior to the imprisonment, died a few years after his conviction, as did the girl's sister. (Both died in World War II.) In her old age, the girl/woman who told the lie writes a novel in which the man and her sister do not die young but live. The man is released from prison and reunites with his lover (the girl's sister). As the author states in her novel, she gives the man and her sister a life in fiction that they did not have in reality, a life that they both deserved. Through writing the novel, the girl/woman receives some relief from her guilt—a catharsis.

Catharsis is an emotional release in therapy and may lead to the relief of psychological symptoms. Therapists in the late 19th century, including Josef Breuer, Jean Charcot, and Sigmund Freud, utilized catharsis with their patients. Many therapists today continue to encourage catharsis in patients. In therapy, a patient may experience an emotional release by discussing his painful past, with resulting relief of psychological symptoms. According to early psychotherapists such as Freud, the cure of psychological symptoms requires that one experience an emotional release; that is, the patient must revisit the past, remembering when the symptom originated. It is essential that the patient feel the strong feelings that were felt when the symptom began. Then, the patient, who is now in a safe, trusting relationship with the therapist, can both experience and express the emotion that he had been suppressing. For instance, Freud's patient the "Rat Man" suffered from many symptoms of obsessive-compulsive disorder, including an obsessive image that his father was devoured by rats. Early in the therapy, Freud suspected that the Rat Man felt an intense anger and hatred toward his father, but he openly expressed only a strong love. In therapy, the Rat Man began to remember some experiences he had forgotten. For example, he recalled that his father used to beat him mercilessly. During the therapeutic session, when the Rat Man recalled this memory, he actually relived the event. He stood up, recoiled, and screamed as if filled with being beaten and experienced the intense anger and hatred he had for his father in that moment. This led

to a catharsis—the Rat Man began to admit the hatred he had for his father, and his obsessive-compulsive symptoms began to diminish.

Some evidence exists that open expression of psychological problems improves psychological or physical health (e.g., Hughes, Uhlmann, & Pennebaker, 1994), thus validating the intuitions of Aristotle, Freud, and others about the benefits of catharsis.

See also Aristotle, artistic expression of emotion, Sigmund Freud, primal therapy, psychoanalytic perspective, transference.

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Cathexis

The concept of cathexis was introduced by Sigmund Freud (1856–1939) and Joseph Breuer (1842–1925) in their 1895 book *Studies on Hysteria* (Breuer & Freud, 1895/1955). Cathexis is used in psychoanalysis to describe the emotional charge associated with an instinct or the process of investing psychic energy (or drive) into a part of the body or an instinctual object. The original German term *Besetzung* (occupation) was used by Freud; the term *cathexis* (from the Greek *kathexis*) was coined in 1922 by Freud's translator James Strachey (Colman, 2001). To *cathectize* an object would mean to invest emotional or psychic energy into the object. In psychoanalytic parlance, an object could be an idea, person, thing, fantasy, wish, social group, goal, or the self (Corsini, 1999). For example, if an individual associates a great deal of symbolic or emotional significance to rainbows, seeing a rainbow might make that individual feel happy or hopeful, not seeing a rainbow might cause him to feel sad or unlucky, or he might have a desire to collect pictures or images of rainbows. A release of psychic energy or affect (e.g., crying, going into a rage) is known as a *cathectic discharge* (or *affective discharge*). *Countercathexis* (also known as *anticathexis* or *counterinvestment*) refers to the psychic energy or force used by the unconscious to repress impulses from the id; the emotional component of the impulse is shifted to its opposite (Marshall, 1998). For example, a person may conceal or attempt to neutralize the unconscious desire to hoard by making visible acts of charity (reaction formation). Unconscious desires that are not neutralized can result in *repression*—an energy-intensive attempt to keep desires submerged in the unconscious—or *sublimation*—unconscious desires finding alternative outlets. The id, one of Freud's structural categories of the psyche, encompasses the infant's most primitive urges for gratification and is dominated by the desire for pleasure through release of tension (Encyclopædia Brittanica, 2008). *Acathexis* (or *acathexia*) is a flatness of emotions or lack of feelings associated with typically emotionally charged ideas. *Hypercathexis* refers to an overabundance of psychic energy invested in an object, while *hypocathexis* describes an abnormally low investment of energy.

The model of energy incorpor[illegible] into E[illegible]ne's (1947) framework for *transactional analysis* (TA; an integ[illegible] ps[illegible]utic approach focusing

elements of psychoanalytic, cognitive, and humanistic psychology) was labeled cathexis and comprised three states: free, bound, and unbound cathexis (Tudor, 2002). Free cathexis describes a state of conscious willful control. Unbound cathexis describes thoughts, feelings, and behaviors that are anathema to an individual but occur despite attempts to control them. Bound cathexis is the part of the self that is unavailable or inaccessible—similar to the psychoanalytic concept of repression. In *The Road Less Travelled* (1978), M. Scott Peck differentiated between love, which is an activity and an investment, and cathexis, which is a feeling. Cathexis includes romantic attraction and the instinct to cuddle pets, while love is the will to extend oneself for the purpose of nurturing another's (or one's own) spiritual growth. Once through the cathexis stage, the work of love can begin.

See also Sigmund Freud, psychoanalytic perspective, psychodynamic psychotherapy and psychoanalysis.

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Child and Adolescent Bipolar Foundation

The Child and Adolescent Bipolar Foundation (CABF) is a national nonprofit organization of over 26,000 parents who have children with pediatric bipolar disorder (formerly called manic depression). Founded by a national steering committee of parents involved in an Internet support group, CABF is a Web-based organization with its membership primarily consisting of parents and professionals, including researchers, medical doctors, neuroscientists, social workers, therapists, civic leaders, and teachers. CABF was incorporated in 1999 in California and has been sponsored by charitable organizations, individuals, corporations, and government agencies. The purpose of CABF is to enhance the lives of families who are raising children with bipolar disorder. CABF seeks to raise public awareness and to provide accurate information to the public about bipolar disorder. The board of directors, led by parents, sets policies and governs the organization. Leading specialists on bipolar disorder—such as scientific researchers, [illegible], and other experts—comprise a professional advisory council that a[illegible]ses the scientific [illegible]acy of materials that are publicized and disseminated b[illegible]BF.

The CABF Web site defines bipolar disorder as a "chronic brain disorder marked by bouts of extreme and impairing changes in mood, energy, thinking, and behavior." The most apparent symptoms of pediatric bipolar disorder are behavioral, yet it is often accompanied by serious cognitive, cardiac, or metabolic symptoms that might go unnoticed. Bipolar disorder can first manifest in childhood, adolescence, or adulthood, and symptoms may arise in a gradual or sudden manner. It is the goal of CABF to guide families in understanding the emotional and medical needs of their children living with bipolar disorder. The CABF Web site provides resources and up-to-date information, including a list of professionals who provide services to families raising children with bipolar disorder, and links to over 20 online support groups. CABF works with public health initiatives and advocates to meet the needs of families raising children with bipolar disorder for accessible medical insurance, education, and research intended to discover causes and cures for bipolar disorder. CABF works to increase funding for research on bipolar disorders and to provide all children with equal access to appropriate evaluation and treatment. A CABF-sponsored review of research on diagnosis and treatment resulted in an article, "Treatment Guidelines for Children and Adolescents with Bipolar Disorder," published in the *Journal of the American Academy of Child and Adolescent Psychiatry* (Kowatch et al., 2005).

See also bipolar disorder.

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Children's Apperception Test

The Children's Apperception Test (CAT) is a projective test designed to measure general personality characteristics, mental health, and emotional maturity in children aged 3 to 10. It was developed by psychiatrist Leopold Bellak and psychologist Sonya Sorel Bellak and originally published in 1949. The test was inspired by Morgan and Murray's Thematic Apperception Test (TAT), originally published in 1935.

The CAT is a projective personality test, which means that assessees (people taking the test) are presented with ambiguous, unstructured stimuli such as inkblots, pictures of people or scenes, or incomplete sentences and are requested to respond in some way—for instance, tell a story, draw a picture, or complete sentences. Projective techniques may assess a wide variety of psychological characteristics, including general personality traits, general level of adjustment, needs, motives, or psychiatric conditions.

The original CAT (now called the CAT-A) consisted of 10 cards that portrayed animals in typical human social situations. (The TAT depicts humans, but Bellak and Bellak thought that children would likely identify with animals rather than with human adults. There is now also a CAT-H, depicting humans, which is used for some children.) When the test is administered, the professional (psychologist, social worker, specially trained teacher or pediatrician) presents the cards one

by one to the child. The child is instructed to tell a story for each card; the story should have a beginning, middle, and end. The child may be asked, for instance, what the characters are feeling, what happened before the scene represented on the card, and what will happen next.

Test interpretation involves looking for themes in the child's responses. Bellak and Bellak suggested evaluating 10 factors when interpreting results, including major theme of the story; the major character's needs, fears, anxieties, and conflicts; and the way the child views the external world.

The CAT has been criticized on many grounds, including as a nonstandardized method of administration with a lack of clear criteria for interpretation (e.g., Knoff, 1998; Reinehr, 1998). Additionally, demographic factors such as sex, race, and socioeconomic status of both the assessor and the assessee affect the stories that are produced, yet these factors are not consistently considered in interpretation. In general, researchers and clinicians who value the test (e.g., Bellak & Abrams, 1997) recommend that the CAT be best viewed as a tool to aid in the understanding of a child—for instance, the child's interpersonal relationship dynamics and typical defense mechanisms—rather than for determining a specific diagnosis.

See also projective tests, Thematic Apperception Test.

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Children's Depression Inventory

The Children's Depression Inventory (CDI) is a 27-item self-rated symptom-oriented scale designed for school-aged children and adolescents 6 to 17 years of age. It was authored by Maria Kovacs, PhD, in 1992. It is published by Pearson Assessments. Each item consists of three statements. The child is asked to pick the statement that best describes her feelings over the past two weeks.

The scales consist of a range of depressive symptoms, including negative mood, interpersonal difficulties, negative self-esteem, ineffectiveness, and anhedonia (sadness or inability to feel pleasure). It was developed in response to an increasing need for self-rated depression inventories geared toward children rather than adults. The CDI helps quantify the severity of the depressive syndrome and can be used as part of a routine screening device in a number of settings, including schools, treatment centers, clinics, private practice offices, residential t[illegible]ment centers, chi[illegible]ective

services for placement and referral decisions, special education and regular classrooms, and juvenile detention centers. Follow-up administration can help monitor treatment or intervention effectiveness. The CDI was standardized on 1,266 Florida public school students aged 7 to 16; 77 percent of the sample was white and 23 percent comprised minority students of African American, Native American, or Hispanic descent.

While the CDI is a useful screening tool, it has weak *discriminant validity*. This means that it does not distinguish well between children meeting the clinical criteria for a depressive disorder and those with another disorder (e.g., anxiety or bipolar disorder). It also does not differentiate well between various depressive disorders (e.g., major depressive disorder versus dysthymic disorder). Therefore the CDI should not be used to diagnose a depressive disorder. It should be used as part of a multimethod, multi-instrument assessment, including rating scales, clinical interviews, and observations.

See also anhedonia, Beck Depression Inventory, depression, Depression Anxiety and Stress Scales, dysthymia, Hamilton Depression Scale, major depressive disorder.

Further Reading:

Pearson Assessments Web site: http://pearsonassess.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=015-8044-762&Mode=summary

Client-Centered Therapy

Client-centered therapy originated in the 1940s and 1950s with the publication of several works by American psychologist Carl Rogers, including the books *Counseling and Psychotherapy* (1942) and *Client-Centered Therapy* (1951). In the earlier book, Rogers dubbed his approach the "new" psychotherapy. He emphasized four main tenets about the newer therapy. First, the psychotherapy patient (later called "client") is viewed as normally choosing to grow and develop. Psychotherapy involves freeing the client for this natural unfolding rather than authoritative direction on the part of the therapist. Second, the newer therapy focuses more on emotional, feeling aspects of a client's experience rather than intellectual features. Third, the client's present experience is emphasized rather than memories and events from the past. Last, the therapeutic relationship is viewed as a potential situation for growth, a situation in which "the individual learns to understand himself; to make significant independent choices, to relate himself successfully to another person in a more adult fashion" (Rogers, 1942, p. 30).

In *Client-Centered Therapy* and in an article published in 1957, Rogers further developed his theory of psychotherapy. He again emphasized that the therapist is not an authority figure; rather, the client is primarily responsible for the course of therapy. He argued that characteristics of the therapist are very important in determining the outcome for the client; in fact, these characteristics may be more important than specific therapy techniques. He identified three important characteristics of the therapist. First, the therapist must experience an "unconditional positive regard" for the client; that is, the therapist is fully accepting of the client, feels warmth, and is nonjudgmental. Second, the therapist must have an empathic understanding of the client. This involves, to a point, seeing things the way the client sees them and feeling what it must be like to be the client. Last, the therapist must be genuine, or

honest with the client. The honesty does not have to be bluntness or brutality, but a certain level of truthfulness and forthrightness is necessary for the client to trust the therapist.

Although client-centered therapy is primarily about creating a certain type of climate in the psychotherapy room and not primarily about technique, Rogers did mention a couple of techniques for his new therapy. One such method is mirroring. In mirroring, the therapist rephrases what the client has said. This has at least two purposes. First, it shows the client that the therapist understands and is empathic. Second, it is a means of clarification for the therapist to ensure that she indeed understands the client. If the therapist's rephrasing seems to be inaccurate, the client may say so. Another method is to encourage experiencing; that is, the therapist encourages the client to feel his feelings in the present, deeply. The therapist will gently guide a client toward focusing on the present rather than the past and toward focusing on emotions rather than intellectual aspects of experience.

Client-centered therapy continues to be a popular as well as effective form of therapy. As discussed in Lambert's (2003) large volume, major types of therapy, including client-centered therapy and counseling, are effective overall. No one type of therapy stands out in terms of overall effectiveness, although some specific conditions are better treated by some particular types of therapy. Their book provides much detail about the research on efficacy of different types of therapy and different types of therapists.

See also encounter group, humanistic psychotherapy, Carl Rogers.

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- According to data from the National Institute of Mental Health and Centers for Disease Control, only 47 percent of adults in the United States who are identified as having serious mental illness receive any sort of treatment.
- Only 23 percent of adults with depression receive treatment, and only 38 percent of those with generalized anxiety disorder receive treatment.
- People struggling with emotional issues may seek help from primary medical physicians rather than from psychotherapists.

- People with medical insurance or more disposable income are more likely to receive therapy.
- Psychotherapy is received more often by women, Caucasians, Latinos, and young adults and proportionately less by African Americans or geriatric (elderly) individuals (Hartston, 2008).

Source: Hartston, H. (2008). The state of psychotherapy in the United States. *Journal of Psychotherapy Integration, 18*, 87–102.

Cognitive Dissonance

Cognitive dissonance is a feeling of discomfort that occurs when one holds two conflicting ideas at the same time. The ideas may include attitudes, beliefs, values, and awareness of one's actions. Often the dissonance is between a belief or attitude on one hand and a behavior (ongoing or already performed) that contradicts those beliefs on the other hand. For example, a manager who has to fire people as part of her job may experience cognitive dissonance if she thinks of herself as a kind person and she has to fire people she thinks are good people or good workers. Another example would be an individual who believes strongly in living in a healthy fashion but has been taking 30 pills of prescription pain medications every day for several years.

Since dissonance is uncomfortable, people are motivated to reduce it. As Festinger (1957) described, dissonance can be reduced by stopping the behavior, changing the dissonant belief through either removing it or reducing its importance, or adding a new consonant belief (one that is not in conflict with the behavior). As changing behavior can be difficult, people often choose to change their beliefs rather than changing their behavior. For instance, in the case of the woman who takes prescription pain medication, she could reduce cognitive dissonance by quitting her drug habit, but this would be very difficult. Another possibility is to choose to believe that taking 30 painkillers every day is not unhealthy. A variant of this is to rationalize the drug habit, for instance, by thinking that many people are addicted to painkillers and only a few actually overdose or develop liver failure, or that her dosage is not high enough to cause problems, or that she is eventually going to die of something and it is likely that something other than the drug addiction will kill her. As another example, she could add a consonant belief to the dissonant ideas by, for example, stressing the benefits of the drug use. She could focus on how relaxed she has been since taking the pills or how she finally gets more sleep.

American psychologist Leon Festinger and colleagues first studied cognitive dissonance in the 1950s, chronicling their research in the 1956 book *When Prophecy Fails* (Festinger, Riecken, & Schachter, 1956). Festinger and colleagues had covertly infiltrated a cult that held the belief that the end of the world was near. The cult leader claimed that on a particular day in 1954, the earth would experience a massive and devastating flood. Cult members would be saved by beings from another

planet, who would arrive in spaceships before doomsday and bring them to safety on another planet. Festinger wondered what would happen to the cult members when doomsday passed by with no flood and no rescuers. Consistent with his new cognitive dissonance theory, he hypothesized that cult members would become even more loyal to one another and their beliefs rather than quitting the cult and coming to their senses. Festinger reasoned that these individuals had given up a great deal to become cult members (many had lost homes, spouses, careers, and friends). It would create extreme dissonance if an individual, knowing his sacrifice, also believed that the sacrifice had been made for a ridiculous reason. Festinger's prediction was correct; although some people left the cult after "doomsday" passed uneventfully, most became even more passionate in their beliefs. The group leader had created an explanation that allowed members to rationalize their continued allegiance to the group: God had called off the disaster because of the goodness and devotion of the cult members.

Cognitive dissonance has been used to explain a wide array of human behaviors that many people find puzzling, including why people stay with romantic partners who physically harm them and why we are extremely loyal to groups that require hazing rituals to gain membership (e.g., fraternities and sororities). In situations such as these, people have to explain to themselves why they would suffer such pain; they often reason that the willingness to experience pain is a sign of how much they love the individual or group that has caused it.

See also ambivalence.

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In the fable of the fox and the grapes (sometimes attributed to Aesop), a fox comes upon a grape orchard and tries to obtain some ripe grapes. When he is unable to reach the grapes after many attempts, he leaves and rationalizes his situation: he says that he did not really want the grapes and that they were probably sour anyway. This story is used to illustrate the concept of cognitive dissonance, when an individual (in this case, the fox) is unable to hold incompatible ideas simultaneously (e.g., wanting grapes but being unable to get them). To reduce cognitive dissonance, the individual alters one of the incompatible beliefs (in this case, rationalizing that he does not really want the grapes).

Cognitive Therapy and Cognitive-Behavioral Therapy

Cognitive therapy and cognitive-behavioral therapy (CBT) are relative newcomers to the psychotherapy world, having become prominent as forms of psychotherapy in the 1970s. The two closely related therapy approaches share a specific way of viewing emotional disturbance, which is that cognitions (thoughts) are central in the etiology and maintenance of mental illness or general emotional disturbance. Furthermore, cognitions cause emotions and behaviors. Thus, according to the cognitive theory of mental illness, to change dysfunctional or distress-related emotions or behaviors, an individual must change her thoughts.

Cognitive therapy and CBT are similar enough in philosophy and practice that the terms are often used interchangeably. The only significant difference is that cognitive-behavioral therapy involves implementation of behavior change as a part of therapy; for instance, the client, in addition to examining her beliefs that lead to a fear of behaving in an assertive fashion, will also practice assertive behavior as part of therapy. Modern therapy may be either exclusively cognitive or involve the behavioral component (CBT). In this discussion, *CBT* will be used to refer to either cognitive therapy or cognitive-behavioral therapy.

CBT has its immediate roots in what has been called the *cognitive revolution*, an interest in human thinking, language, and memory, and other cognitive factors, which occurred in psychology, philosophy, linguistics, computer science, and other fields beginning in the 1950s. The invention of the computer played a part in this revolution, as it inspired scientists and academics to think about what constitutes thinking and problem solving and the processes involved in these and other cognitive functions. This movement challenged the prevailing behavioral movement in psychology (a focus on only directly observable behavior as a legitimate object of study) and, due partly to the popularity of behaviorism in the 1950s and 1960s, did not have its greatest impact until the 1970s. Examples of nonpsychologists who played important roles in the cognitive revolution during the 1950s and 1960s included linguist Noam Chomsky, who argued against a strictly behavioral approach to understanding language, and Allen Newell (a computer scientist) and Herbert Simon (an economist), who studied artificial intelligence and human cognition.

The general philosophy behind CBT has an even longer history—an ancient history—dating back to the Greek Stoics. The famous quote "What upsets people is not things themselves but their judgments about the things" (Epictetus, 1983, p. 13) is attributed to the Stoic philosopher Epictetus, who lived from about AD 55–135.

Epictetus's sentiment communicates the general idea behind the cognitive model of mental illness and CBT: the primacy of thought. In more detail, the emphasis that CBT places on thought is associated with a number of related ideas. First, people construct their worlds, an idea called *constructivism*; that is, what is important in terms of determining an individual's experience and emotions is not directly the events that occur to her but the way she understand the events. For a therapist to help a client, the therapist needs to ensure that the client understands and is able to articulate her viewpoint and its implications. Furthermore, the therapist likely needs to suggest or prompt alternative ways of viewing events. Another important principle is called *active agency*. From the point of view of cognitive theory, people

are not simply pawns, batted about by their environments; people are active participants, agents who shape their own lives. In logistic terms, CBT is problem oriented, in which the focus is on specific problems rather than on vague life dissatisfactions, and solution focused, helping the client to solve problems and develop helpful coping skills. Additionally, CBT focuses on empiricism, meaning that the client will try out new ways of looking at things, and probably new behaviors, to see if they work; both the therapy sessions and the real world will become laboratories for testing hypotheses about more effective, less distressful living.

Numerous early cognitive and other theorists in psychology produced theories that led directly to CBT. American psychologist George Kelly is thought by some to be the first modern cognitive therapist, conducting therapy sessions that could be classified as cognitive as early as the 1930s (e.g., Jankowicz, 1987). Kelly developed a comprehensive personality theory, which he published in 1955, in which he conceived of people as scientists. According to Kelly, humans view the world through utilizing personal constructs, which are our criteria on which we evaluate people, objects, and everything in life. For instance, one person may habitually evaluate people on the constructs "nice versus mean" and "outgoing versus shy," whereas another person may evaluate people on the constructs "smart versus dull" and "attractive versus unattractive." In Kelly's view, mental illness and general mental distress are usually caused by problems with one's construct system or with how it is applied to the world, or both. Kelly developed a therapy in which he would advise his client to become a new person, a person who has qualities that the client finds desirable. Kelly would write a script describing the new person, even giving the fictitious person a name (e.g., "Elise"), and instruct the client to behave like this person in the real world for some period of time, say, two weeks. Thus Kelly's theory and therapy included most of the fundamental characteristics of CBT, including constructivism and empiricism. Another theoretical approach that greatly influenced CBT was behaviorism, with the emphasis on behavior and behavior change and human agency. Additionally, Albert Bandura's social learning theory, proposed in the 1960s, had an effect on the development of CBT. In Bandura's model of human behavior, behaviorism is a foundation as a learning theory; however, Bandura expanded this viewpoint to include cognitive factors that influence learning, including learning by observation (called social learning or modeling).

Many versions of cognitive therapy or CBT currently exist. American psychologist Albert Ellis's rational emotive behavior therapy, which was originally published in 1955, is described in an entry in this book, as is South African psychologist Arnold Lazarus's multimodal therapy, which Lazarus began to develop as early as the late 1950s and published in 1989. Another significant CBT therapist is American psychiatrist Aaron Beck. Beck's initial contribution was in the treatment of depression, which he began to view from a cognitive orientation after his discovery that a Freudian interpretation did not "fit" (Beck, 1976). For instance, according to Freudian theory, depression is anger directed inward, and thus a depressed person's dreams should include themes of hostility. However, in Beck's inspections of his clients' dreams, he found patterns of emptiness, failure, and loss (Leahy, 1996). According to Beck, the source of depression is the client's negative belief system. In particular, Beck discussed that a *cognitive triad* exists for depressed people: negative thoughts about the self, the world in general, and the future. Furthermore, according to Beck, the

depressed person undergoes a shift in perception: she attends more to negative information, especially about the self, rather than attending to positive information. Therapy thus involves questioning these negative thoughts and prompting alternative constructions or interpretations of the situations one experiences. Other significant forms of CBT include Donald Meichenbaum's self-instructional training and stress inoculation training, Marsha Linehan's dialectical behavior therapy, and Steven Hayes's acceptance and commitment therapy.

CBT has met with great success. One or more of the forms described or referred to have been used to treat depression, anxiety, eating disorders, personality disorders, schizophrenia, bipolar disorder, substance abuse, pain, couples problems, and other disorders and issues and have been used as forms of stress management. In many cases, evidence indicates that CBT is an effective treatment (see, e.g., Oakley & Freeman, 2009, for a discussion). Many, if not most, American counseling or clinical psychology graduate programs involve training in CBT techniques. CBT is likely to remain a popular treatment, with modifications and new developments continuing into the future.

See also ABC Model of Emotional Reaction, Aaron T. Beck, behavior therapy, Albert Ellis, Arnold A. Lazarus, multimodal therapy: BASIC I.D., rational emotive behavior therapy, the Stoics.

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Complementary and Alternative Medicine

Complementary and alternative medicine (CAM) used to treat mental health conditions may include modern, traditional, or ancient practices such as acupuncture, meditation, yoga, or nutritional interventions. Alternative approaches often emphasize the interrelationship between body, mind, and spirit (National Mental Health Information Center [NMIHC], 2003). Mind-body techniques include relaxation, mental imagery, hypnosis, meditation, and biofeedback. Physical modalities include massage, aromatherapy, homeopathy, chiropractic treatment, acupuncture, and yoga.

Spiritual therapies include prayer, pastoral counseling, and spiritual healing. Nutritional therapies may include special diets or herbal or dietary supplements (Elkins, Marcus, Rajab, & Durgam, 2005). Energy medicine makes use of energy fields such as light, sound, or electromagnetic forces.

A therapy is considered *complementary* if it is used *in addition to* a conventional treatment (e.g., prescription medications, psychotherapy). A therapy is considered *alternative* if it is used *instead of* conventional or generally accepted therapies. Some therapies that were once considered alternative (e.g., acupuncture) are now accepted more broadly within the mainstream medical community and are covered by some health insurance plans. Other therapies are widely accepted by the public (e.g., chiropractic care) but are still considered alternative by the mainstream medical community.

CAM may be used to treat conditions such as anxiety, depression, bipolar disorder, insomnia, fatigue, chronic pain, or schizophrenia. CAM treatments for anxiety and depression include physical exercise, mindfulness meditation, acupuncture, and nutritional approaches (Elkins et al., 2005). Nutritional approaches (including vitamins, minerals, amino acids, herbal treatments, and special diets) have been used to treat anxiety, depression, bipolar disorder, obsessive-compulsive disorder, schizophrenia, autism, and attention-deficit hyperactivity disorder. Self-help groups (such as support groups or 12-step programs) may be useful for people dealing with issues such as a death, abuse, addiction, or mental health problems of themselves or a family member. Pastoral counseling, animal-assisted therapy, and expressive therapies (e.g., art, drama, music) can be used in addition to or instead of conventional psychotherapy. Culturally based types of healing usually incorporate the idea that wellness involves a balance between mind, body, and spirit and between the self, others, and nature. Addressing imbalances may restore health. Culturally based practices include traditional Asian techniques such as acupuncture, shiatsu, and Reiki; Indian systems such as Ayurveda and yoga; and Native American healing practices such as the sweat lodge and talking circle (NMIHC, 2003).

Some energy therapies employ energies that can be measured (e.g., sound, light, magnetism, radiation), while others employ energies that defy measurement (known as *biofields*). One type of biofield—the vital energy or life force—is known as *qi* in traditional Chinese medicine, *doshas* in Ayurvedic medicine, and elsewhere as *prana*, *fohat*, *orgone*, and *mana* (NMIHC, 2003). Some energy therapists claim that they can see this subtle energy and use it to influence physical and emotional health. Therapists who practice qi gong, Reiki, and Johrei manipulate biofields. There is growing evidence that magnetic fields can influence emotional states. For instance, transcranial magnetic stimulation is a therapy that shows promise for the treatment of depression (Mashour, Walkier, & Martuza, 2005). Light therapy (phototherapy) has been found useful in the treatment of seasonal affective disorder. Other types of energy therapies include low-power millimeter waves and sound energy (including music).

Some CAM approaches include extraordinary claims that may be difficult to verify. For example, one claim is that water will crystallize into different forms when exposed to different messages (positive or negative) and to different types of music (e.g., classical or heavy metal). By drinking specially formulated water created from

these crystals, a client can be healed of physical or emotional issues. This is purportedly accomplished through the water delivering specific vibrations to restore harmony (Emoto, 2004). Another study claims that accomplished meditators can imprint their intentions on electronic devices, and those intentions can affect room temperature or change water pH months later and thousands of miles away (Tiller, Dibble, Nunley, & Shealy, 2004). As with conventional therapies, when considering utilizing CAM, it is useful to look at research into potential risks, benefits, and effectiveness. Research results into CAM vary, as does the quality of the research.

See also acupuncture, antidepressant, antimanic, antipsychotic, anxiety, anxiolytic, biofeedback, bipolar disorder, depression, light therapy, meditation, mood stabilizer, nutritional therapies, obsessive-compulsive disorder, schizophrenia, seasonal affective disorder, St. John's wort, yoga.

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Conditioned Emotional Response

A conditioned emotional response (CER) is an emotional response that is the result of a particular type of learning called *classical conditioning*. CERs may occur unconsciously (below awareness).

Classical conditioning occurs when an organism associates two external stimuli and therefore learns to react very similarly to these two stimuli. For example, humans and other animals naturally react with fear to loud noises. If a stimulus (such as a rat) is repeatedly associated with a loud noise, and if a person then develops a fear of the rat when this fear did not exist prior to conditioning, classical conditioning has occurred. In this example, the learned fear of the rat is the CER.

CERs were first researched in the early 1900s. Probably the most famous example of a CER is associated with the Little Albert study, a study published in 1920 by American psychologist John Watson and his graduate student and future wife, Rosalie Rayner. Watson and Rayner set out to demonstrate that an emotion could be conditioned in an infant, thus showing that emotions are not entirely inborn and can be manipulated. In the study, Watson and Rayner took nine-month-old Albert and conditioned him to fear a white rat. They started by demonstrating that Albert was not initially afraid of the rat. In fact, before the study procedures, Albert happily allowed the rat to walk near him and to touch him. Next, the researchers presented Albert with a stimulus that he naturally feared (a loud noise, produced

behind Albert's head) and presented the white rat simultaneously. The loud noise and the rat were paired and presented to Albert several times. Albert cried during these conditioning trials. After seven pairings of the noise and rat, Albert began to cry and show other fear behaviors when the rat was presented by itself. Watson and Rayner had demonstrated that they could condition an infant to fear a previously unfeared object.

Many other studies on CERs have been conducted since Watson and Rayner's. Early studies tended to focus on fear, but any emotion can be conditioned through classical conditioning. For instance, animals can be taught to associate stimuli with positive emotions. When one of the authors and her husband adopted a feral kitten who had apparently had very little prior experience with humans, they had to train the kitten (Cleo) to like them. When first adopted, Cleo would continuously hide under the furniture, bathtub, and so on. She would come out only to eat and use the litter box. In order to train her to have positive feelings toward us, we began to very slowly and gently (and sneakily) pet her while she was eating (since the act of eating is presumably associated with positive emotions). We would also play with her with some string while she was hiding under the furniture, occasionally touching her very slightly (associating the human touch with the feelings that occur during playing). In time, Cleo began to approach us to play, to pet her, and so on. Within a few months, rather than hiding, her behavior was quite opposite. Most often, she is present in the same room as her human companions, following them from room to room. When she wants to snack on the dry food that is left out for her convenience, she often "insists," through persistent meowing, that one of her human companions pet her while she eats.

Classical conditioning can be used as treatments for some mental disorders or behavior problems. Systematic desensitization is a treatment for phobias (fears of specific objects or situations) in which people are taught through classical conditioning to associate the feared object or situation with relaxation. After conditioning, a CER of relaxation and lack of fear will occur when the individual is exposed to a previously feared object or situation. Classical conditioning can also be used as treatments for addiction, obsessive-compulsive disorder, eating disorders, behaviors associated with autistic spectrum disorders, and other disorders. Several experts have described the variety of modern uses of classical conditioning techniques as treatments for mental disorders (e.g., Spiegler & Guevremont, 2009).

See also aversive conditioning (aversion therapy), behavior therapy, behaviorism, exposure with response prevention, galvanic skin response, learned helplessness, systematic desensitization, John Watson.

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Contempt

The emotional experience that we label *contempt* has received relatively little research attention compared to many other emotions. Beginning in the 1990s, however, a few researchers began to explore the precise meaning and function of this emotion in the context of modern theories, and some progress has now been made in our understanding. Kalat and Shiota (2007) define contempt as "an emotional reaction to a violation of community standards" (p. 225). Contempt overlaps in some ways with two other emotions: disgust and anger; all three emotions can be reactions to moral violations or offenses. According to Rozin, Lowery, Imada, and Haidt (1999), one feels contempt when one perceives another violating the moral code of community standards. For instance, one may attend a party at which his state senator is present and observe the senator making passes at many of the women at the party. The individual observing this behavior may think that the behavior is unsenatorial, therefore unacceptable, and may thus feel contempt for the senator. This observer may judge people who are not senators less harshly. However, another observer might see this behavior is unacceptable regardless of who is engaging in it and would feel contempt for anyone who behaves as the senator did. A feeling of anger might be a reaction to a violation of individual rights. For instance, someone who believes that his freedom of speech was violated might feel angry. Disgust occurs in the context of an offense to one's sense of purity when one feels that something impure or base has occurred. A feeling of moral disgust toward another person is usually accompanied by a wish to minimize association or contact with the other person, almost as if the moral impurity could be contagious.

Fischer and Manstead (2008) and others discuss the social function of contempt. Contempt (along with anger and moral disgust) serves to create social distance between people. They argue that, in contempt, others are blamed for some circumstance; those who feel contempt are sending a message of rejection and social exclusion. The message further conveys that the object of contempt is perceived as inferior or even worthless. Fischer and Manstead make the point that, while emotions may have functions, this does not imply that the effects of emotions are always functional. For instance, behaving as if an individual (the "object") is contemptuous could have the (possibly) unwanted effect of causing irreversible damage to a relationship. As Fischer and Roseman (2007) point out, expressing contempt is unlikely to improve relationships. Conversely, expressing anger may be helpful for relationships in some circumstances. The purpose of anger is to pressure an individual to give in to one's position or demands. While anger conveys a sense that the other is blamed, it does not necessarily communicate that the other is viewed as inferior. In the long run, anger may either improve or harm relationships. An expression of contempt, especially if it originates in an individual who does not typically express contempt, may be an emotion of last resort; the individual has given up on the person toward whom he feels contempt.

See also anger, disgust.

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Contentment. *See* Happiness.

Cotard's Syndrome

Cotard's syndrome involves delusions or thoughts of self-negation; individuals may think they are dead or that some of their body parts are missing or putrefied. They may hold the paradoxical beliefs that they are immortal, yet they continue to function and exist, although they have died. French psychiatrist Jules Cotard (1840–1889) was a student of Broca and worked under Charcot (Berrios & Luque, 1995a). In 1880, Cotard presented a case involving these delusions to the French Psychiatric Society in Paris. He referred to similar cases that had been described by other doctors from as early as 1814. In 1882, he introduced the term *délire de negation* (which has been translated as "nihilistic delusion"), which later became known as Cotard's delusion or Cotard's syndrome (Berrios & Luque, 1995a).

Cotard's syndrome may be accompanied by symptoms of depression, anxiety, depersonalization (a sense of detachment from the perception of the self and the body), and/or derealization (a sense of strangeness or unreality). It has been reported in individuals who have schizophrenia, depression with psychotic features, bipolar disorder, dementia, migraine, brain lesions, brain tumors, traumatic brain injury, seizure disorders, typhoid fever, Parkinson's disease, and multiple sclerosis (Gardner-Thorpe & Pearn, 2004; Shorter, 2005; Taylor, 2007). It has also been reported as an adverse reaction in patients with kidney failure taking the antiviral drug acyclovir (Hellden, Odar-Cederlof, Larsson, Fehrman-Ekholm, & Linden, 2007). Cotard's has been associated with structural abnormalities in the brain, including atrophy (wasting away) of the cerebellum and dilated (enlarged) lateral ventricles (Kudlur, George, & Jaimon, 2007). Dilated lateral ventricles (part of the telencephelon of the brain) are often found in individuals with schizophrenia or bipolar disorder. Cotard's may also be associated with an impaired ability to recognize faces (Kudlur, George, & Jaimon, 2007).

In 1995, British psychiatrists German E. Berrios and Rogelio Luque analyzed 100 cases of Cotard's. Most common symptoms reported included depression (in 89% of cases), nihilistic delusions concerning the body (86%), nihilistic delusions concerning existence (69%), anxiety (65%), guilt (63%), hypochondriacal delusions (58%), and delusions of immortality (55%). On the basis of their analysis, Berrios and Luque divided cases into three types: psychotic depression, Cotard type I, and Cotard type II (Berrios & Luque, 1995b). The psychotic depression type includes depression and few nihilistic delusions; Cotard type I is mostly delusional with no depression; and Cotard type II includes anxiety, depression, and auditory hallucinations. The type of Cotard's may offer information without the etiology (cause)

and have implications for appropriate treatment. Cotard's has been most successfully treated with electroconvulsive therapy (ECT; Caliyurt, Vardar, & Tuglu, 2004). It sometimes responds to atypical antipsychotic medication (Shiraishi et al., 2004).

Cotard's fits within the category of delusional misidentification syndromes, which also includes Capgras syndrome and Fregoli syndrome. Capgras involves the delusion that a friend or loved one has been replaced by an imposter or clone. Fregoli syndrome involves delusions of being persecuted by a familiar person who can change his shape and appearance. All the delusional misidentification syndromes are extremely resistant to correction. For example, someone with Cotard's will remain convinced that she is dead, even when presented with strong evidence to the contrary (Taylor, 2007). An unusual adjunct to Cotard's syndrome is something that has been termed *Odysseus syndrome*, or *nihilism by proxy*. This is a delusional disorder in which an individual believes that a loved one has died or that a loved one's body parts or organs have been replaced or are putrefying, despite evidence to the contrary (Connelly, Rodriguez-Castello, & Robertson, 2005).

See also antipsychotic, bipolar disorder, depersonalization, depression, electroconvulsive therapy, Parkinson's disease, schizophrenia, traumatic brain injury.

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The film *Synecdoche, New York* (2008, directed by Charlie Kaufman) portrays features and themes of Cotard's and Capgras syndromes, including depression, depersonalization, and nihilistic ideas about the body/hypochondriasis (movie description available at http://www.imdb.com/title/tt0383028/).

Countertransference. *See* **Transference.**

Couples Therapy

The most common concerns that bring people to psychotherapy are in the area of intimate relationships. One option for working with intimate relationship issues is to seek couples therapy, which has been growing in popularity over the past several decades (Johnson & Lebow, 2000).

From the point of view of the therapist, therapy with couples entails unique challenges and opportunities compared to therapy with individuals. Tremblay and Phillips (2009) discuss some of these distinctive concerns. First, working with couples requires thinking in terms of systems rather than in terms of individuals. A couple is a system, "an organized collection of parts that perform a function" (Tremblay & Phillips, 2009, p. 331), in which the parts of the system are interdependent and reciprocally affect one another. Second, couples work is different from work with an individual client in that the therapist sees more than one perspective for any given problem, in the form of the differing points of view of the members of the couple. This raises the possibility of an alliance more toward one member than toward the other. The therapist must strive to maintain neutrality and ally with both members. Owing to these factors, the therapist will tend to view the couple's problems as residing in the interactive system (the couple) rather than in one individual. Another unique aspect of couples work, ripe with opportunity, is that the therapist can see an interpersonal problem occurring right in the consulting room, in vivo, rather than relying on one person's retrospective report of her interpersonal difficulty, as would occur in individual therapy.

Special problems and issues may arise in couples therapy, as discussed by Tremblay and Phillips (2009). For instance, couples may wait a long time before coming to therapy, creating a situation in which at least one partner is emotionally distant by the time therapy begins. Unfortunately, couples therapy is less effective if emotional distancing has occurred (Jacobson & Addis, 1993). In addition, the issues of gender roles and power often arise in couples therapy; one partner may have traditional gender role expectations for the partnership, while the other partner desires an egalitarian relationship. Also, either violence or substance abuse or both may be present in the relationship, creating potential ethical problems or opportunities for the therapist and therapy. For example, the therapy session could bring problems to the head that then provoke violence outside of the therapy session. Conversely, therapy may dissipate aggressive impulses which may have otherwise been acted out outside of therapy. If substance abuse is present in one member of the couple, the therapist has to negotiate the issue of alliance very delicately; the substance abuse should not be encouraged or promoted; however, trust and respect must be maintained with both members of the couple. Special concerns may arise in therapy with same-sex couples, for example, clients may feel that therapists are less likely to understand or support their relationship.

Two types of couples therapy are clearly supported by evidence: behavioral couples therapy (BCT) and emotion-focused therapy for couples (EFT; Byrne, Carr, & Clark, 2004). The theory behind BCT is that couples who have a difficult relationship have become involved in interactions in which they reinforce negative behavior

with one another. BCT involves treatment in two main areas: (1) increasing positive interactions through behavioral techniques and (2) improving problem solving and communication skills. To work on increasing positive interactions, the therapist helps the couple to identify activities that both individuals enjoy. The couple is instructed to engage in these pleasant activities; they may create a calendar, with the homework assignment of doing the enjoyable activities that they have written on the calendar. Another way to increase positive interactions is for the therapist to encourage behaviors that result in each partner feeling intimate and supported. In problem-solving and communication skills work, the therapist works with real, presenting issues, identifying social interactions that are not constructive and providing instruction and homework assignments to improve these areas.

EFT uses systems theory and attachment theory as a framework for understanding conflicts and dysfunction in couples. Since systems theory implies that disorder occurs in the system (couple) rather than in individuals, patterns of interaction are explored in an attempt to change those patterns that cause distress. For instance, a couple may be engaged in a cyclical pattern of one partner criticizing, the other withdrawing, the first partner criticizing more, followed by the second partner withdrawing further, and so on. According to attachment theory, people have different styles of attachment to significant others, which includes differences in desires for closeness; some attachment styles may conflict. As Greenburg and Johnson (1988) described, clash of attachment styles may lead to cyclical patterns such as pursue-and-withdraw, mutual attack, or mutual withdrawal. Therapy involves identifying the cycle, helping partners to express their attachment needs and helping partners to understand the other's attachment needs.

In general, couples therapy is as effective in relieving distress in relationships as individual psychotherapy is in relieving distress regarding individual concerns (e.g., Johnson & Lebow, 2000).

See also attachment, behavior therapy, family therapy, gender and emotions, interpersonal psychotherapy, relationships.

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Crying

Crying is a behavior associated with emotion, usually sadness. In humans, crying may involve wailing and other vocal [illegible] often including tears

In other animals, crying involves vocalizations, but tear shedding does not occur regularly (and does not occur at all with some animals). Human and nonhuman (mammal and some bird) infants cry when hungry and when separated from their mothers. Adult humans and animals may cry when in pain or experiencing other distress. In humans, crying is sometimes associated with happiness ("tears of joy").

The purpose of infant crying is clearly to attract attention and increase the chance that needs will be met. The purpose of crying in adults is less clear since adults can communicate their distress verbally. One proposed reason is that crying elicits a stronger reaction in people than does verbal expression; crying has more impact than simply telling someone that you are sad. Singer et al. (2004) found that when people observe others who are crying, their brain activity is similar to activity that occurs when they themselves experience unpleasant emotions. Another explanation is that crying may be cathartic, allowing an emotional release that makes the individual feel better. However, research has generally not supported this theory. For example, in an experiment in which participants watched a sad film, one group was encouraged to cry while the other group was instructed to suppress their tears. At the end of the movie, those who had cried reported feeling worse (more depressed) than those who had held back (Kraemer & Hastrup, 1988).

Researchers Murube, Murube, and Murube (1999) took a direct approach to the question of why people cry. They asked 164 medical students to record all the instances when they cried over a two-week period. The results indicated that research participants most often cried either when requesting help or offering help; in other words, when suffering or when sympathizing with the suffering of others. These findings are consistent with the ideas that crying operates primarily to express distress and solicit help, with the helper first experiencing empathy for the distressed person. However, much about the purpose of crying remains mysterious; crying is a fertile ground for research. For example, why we experience "tears of joy" is largely unexplained.

See also empathy, nonverbal expression, sadness.

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Culture

Culture can be thought of as a set of shared attributes, goals, and practices that characterize a group. Cultural group members may share similar characteristics based on language, religion, nationality, and ethnicity. Variation can be

found in emotional values, recognition, and expression (e.g., which emotions should be expressed or suppressed, what constitutes appropriate expression of emotion).

Charles Darwin's (1872/1998) view was that emotional expressions were universal and directly associated with underlying emotional states. This view was rejected by those who considered facial expressions to be only social or cultural signals. However, Darwin's ideas were vindicated by Ekman, Friesen, and Ellsworth (1972) and by more recent research. Other researchers advocate a position acknowledging universal emotions as well as cultural variation in the expression and recognition of emotion. While basic emotions tend to be universally recognized, they are not expressed in exactly the same way in different cultures. Some research has found that individuals are better at recognizing emotional expressions from members of their own cultural group (Hess & Thibault, 2009). One study showed that the same muscles are used across cultures to produce facial expressions of fear, disgust, or embarrassment, but different muscles were used to produce expressions of serenity, shame, contempt, anger, sadness, surprise, and happiness (Elfenbein, Beaupré, Lévesque, & Hess, 2007).

Culture is shaped by language, and language influences thoughts, behaviors, and feelings. Emotion words do not always correspond from one language to another. For example, the Japanese emotion word *amae* has been translated into English as affection, love, and dependency—but none of these English words accurately captures the meaning of this Japanese emotion. Language is essential to the study of emotion, especially when exploring cultural similarities and variations in emotions and emotional expressions (Harkins & Wierzbicka, 1997). *Basic* or *primary* emotions—those that are considered innate, biologically determined, universal to all human beings, and characterized by similar facial expressions—may vary across cultures and times. For example, in 1971, Paul Ekman described six primary emotions: surprise, happiness, anger, fear, disgust, and sadness. Compare these with nine primary emotions described by a medieval (third to fifth century BC) Sanskrit text: sexual passion, amusement, sorrow, anger, fear, perseverance, disgust, wonder, serenity. Only three primary emotions are common to both lists (anger, fear, and disgust), and of those, one cannot assume that these words mean the same things in both cultures (Shweder & Haidt, 2000).

When asked, most people will say they want to feel "good." However, people's conceptions of what a good feeling is vary by culture. Different cultures emphasize and value different emotions, and members of cultural groups learn through socialization about culturally appropriate ways of expressing emotion. Western cultures (such as in the United States) tend to be individualistic, valuing autonomy and promoting independence, achievement of individual goals, attending to the self, and discovering and expressing unique, inner attributes. Asian cultures tend to be more collectivist, emphasizing harmonious interdependence with others, attending to others, and fitting in (Markus & Kitayama, 1991). Feeling rules are social norms that prescribe how people should feel in certain situations. For example, among the Utku Eskimos, it is considered inappropriate to express anger, while members of the Kaluli culture (rain forest dwellers in Papau New Guinea) are expected and encouraged to show their anger (Eid & Diener, 1991).

Emotions can be described along two dimensions: *valence* (e.g., positive or negative emotions) and *arousal* (high or low level of arousal). For example, excitement,

enthusiasm, and elation are feelings that have a high level of arousal and a positive valence (high arousal positive, or HAP). Emotions that are low arousal positive (LAP) include calm, relaxed, and peaceful. High arousal negative (HAN) emotions include fearful, hostile, and nervous, while dull, sleepy, and sluggish are low arousal negative (LAN) emotions. Cross-cultural research has shown that while most people value positive emotions (HAP and LAP), Western (e.g., European-American) individuals tended to value HAP emotions, while East Asian (e.g., Hong Kong Chinese) individuals tended to value LAP states. One study showed that Chinese American college students valued positive states that were in between HAP and LAP. A culture's ideal affect—the type of emotions valued by a culture—is reflected in many aspects of a culture, including interpersonal communication styles, parenting practices, popular media, and religious practice (Tsai, 2007).

Manifestations and expressions of emotions may be seen as psychopathology by mental health practitioners (or researchers) from different cultures or those who do not take the cultural context into consideration. Overgeneralization of symptoms and family dynamics by well-intentioned researchers and mental health practitioners results in stereotypes, labeling, and mistreatment. Members of the dominant culture within a society may not appreciate or be able to properly conceptualize the experience of members of minority groups.

Cultures may dictate appropriate outlets for the expression of emotion or distress. Behaviors or psychological symptoms that seem unusual or eccentric from a majority cultural perspective (e.g., American) may be labeled as culture-related specific syndromes. A culture-related specific syndrome is a mental condition or psychiatric syndrome that is closely related to cultural issues, warranting treatment and management from a cultural perspective. However, as cultures evolve, so do cultural idioms, culturally sanctioned expressions, and concepts of what constitutes aberrant behavior.

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000) is a diagnostic classification system for mental health disorders used mostly in the United States. While the *DSM-IV-TR* encourages mental health practitioners to consider multicultural factors and environment when formulating diagnoses and treatment plans, it has been criticized as having a Western, ethnocentric and egocentric view, being focused on diagnosis (the clinician's perspective) rather than on the patient's experience, and minimizing social and cultural factors (Hughes, 1998). Culturally competent treatment takes into account an individual's cultural identity (including multiple cultural identities) and degree of acculturation. To be able to provide culturally competent treatment, mental health treatment professionals should be specifically trained in multicultural issues.

See also affect, basic emotions, culture-related specific syndromes, *Diagnostic and Statistical Manual of Mental Disorders*, display rules, gender and emotions, nonverbal expression, universal signals.

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Culture-Related Specific Syndromes

During a period of colonization and exploration starting in the late 19th century, predominantly Western (European and North American) anthropologists, missionaries, and ethnographers encountered and described what they considered unusual manifestations of psychological distress. They labeled these manifestations as psychogenic psychoses, ethnic psychoses, ethnic neuroses, hysterical psychoses, exotic psychoses, and culture-reactive syndromes (Tseng, 2006). The concept of culture-bound syndromes was introduced in 1962 at the Third World Congress of Psychiatry by Malaysian transcultural psychiatrist Pow Meng Yap (1921–1971). A glossary of culture-bound syndromes was included as an appendix in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994). This lent several identified (and sometimes well researched) syndromes a new legitimacy among Western mental health researchers and practitioners. The stated goals of the glossary included enhancing the cross-cultural applicability of the *DSM-IV* and "assist[ing] the clinician in systematically evaluating and reporting the impact of the individual's cultural context" (American Psychiatric Association, 2000, p. xxxv).

While there are folk labels for many psychological and behavioral manifestations, not all of them are psychiatric disorders or syndromes. Some behaviors are eccentricities that do not warrant treatment; some are socially taught (and sanctioned) manners of expressing distress or requesting social support. Psychiatric classifications—for example, in the *DSM* and the *International Statistical Classification of Diseases and Related Health Problems* (*ICD*; World Health Organization, 1990)—are based largely on Anglo-Saxon assisted populations in Europe and North America

as described by mostly Western psychiatrists. Some manifestations were considered unusual or exotic because of Westerners' ethnocentric views of psychopathology. Transcultural psychiatrists later suggested the term *culture-related specific syndromes* (Tseng, 2006). A culture-related specific syndrome is a mental condition or psychiatric syndrome that is closely related to cultural issues, warranting treatment and management from a cultural perspective. Syndromes can be grouped in various ways. The *DSM* groups disorders according to groups of symptoms or behavioral manifestations (e.g., mood, psychotic, dissociative). Culture-related specific syndromes, which may not fit into a single group, may be grouped more meaningfully by examining how the culture impacts psychopathology.

Inadequate investigation into a culture-related specific syndrome can result in misdiagnosis and inappropriate treatment, of either psychiatric or physical conditions. *Dhat*, a syndrome found in India, involves the perception of semen loss often accompanied by physical weakness, fatigue, and mental lethargy. A study of psychosexual concerns in rural India showed that current health screening protocols, which do not include screening for *dhat*, may result in overdiagnosis of sexually transmitted disease and overtreatment with antibiotics (Gautham et al., 2008).

Sometimes the assumption that a syndrome is bound to a particular culture is faulty. *Ataque de nervios* has been described as a cultural syndrome or idiom of distress reported by Latinos from the Caribbean, Latin America, and Latin Mediterranean groups. It may include shouting, crying, trembling, physical aggression, dissociative experiences, seizures or fainting, suicidal gestures, and a sense of being out of control. The onset usually follows a stressful event relating to the family (e.g., death of a loved one, separation or divorce, conflict with children). A study found that *ataque de nervios* is not unique to Hispanic cultures and is experienced at similar rates by non-Hispanic individuals (Keogh, Timpano, & Schmidt, 2009).

The phenomenon of *running amok* has been described in Papua New Guinea, Malaysia, Laos, Thailand, and the Philippines. It consists of dissociative episodes followed by apparent psychosis and may involve injuring or killing others. *Amok* was originally the war cry of Malay pirates, whose plundering behavior was socially sanctioned and regarded as honorable. In the 16th through 18th centuries, those who ran amok deliberately planned their actions and avoided injuring friends or family. However, after the British colonial government passed legislation in 1893 mandating that people who ran amok should be prosecuted, the incidence of amok episodes declined sharply (Tseng, 2006). Amok behavior evolved from a deliberate, conscious, frenzied, socially tolerated attack to an unconscious psychotic disorder (Tseng, 2006). After amok behavior was no longer socially sanctioned, amok episodes occurred in dissociative states, with indiscriminate killing and injury and amnesia following the event. Similar phenomena in other cultures include *cafard* or *cathard* (Polynesia), *mal de pelea* (Puerto Rico), and *iich'aa* (Navajo; American Psychiatric Association, 2000). Amok behavior has occurred recently in the United States, with shooting in workplaces and on school campuses. As in other cultures, Americans have devised their own folk labels for the phenomenon (e.g., "going postal"). It has been suggested that anorexia nervosa, obesity, and premenstrual syndrome are culture-specific syndromes shaped by Western societies (Tseng, 2006). Culture can affect psychopathology in various ways. It can influence the formation of a disorder,

select certain coping patterns to deal with stress, modify the clinical manifestation of the disorder, elaborate mental conditions into a unique presentation, promote the frequency of occurrence, or shape folk responses to the clinical condition (Tseng, 2006).

Attempts to categorize culturally related specific syndromes within existing systems (e.g., *DSM* or *ICD*) may yield diagnostic labels that do not appropriately consider cultural factors. This may result in culturally incompetent diagnosis or treatment of mental health symptoms. It is important to understand culture-related specific syndromes on their own terms as well as in relation to other psychiatric disorders. Mental health practitioners need to have appropriate multicultural training and experience and to consider cultural context and factors when treating any individual.

See also culture, *Diagnostic and Statistical Manual of Mental Disorders*, *International Statistical Classification of Diseases*, postal.

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Research shows that significantly more subjects with an anxiety or affective disorder plus *ataque de nervios* reported a history of physical abuse, sexual abuse, and/or a substance-abusing caretaker than those with psychiatric disorder but no *ataque.* In some Hispanic individuals, *ataque* may represent a culturally sanctioned expression of extreme affect dysregulation associated with childhood trauma (Schechter et al., 2000).

Culture Shock

The term *culture shock* was used first by anthropologist Kalervo Oberg (1960) in an article in which he described feelings people experience when they leave their country and have their first encounters with a different culture. He compared

culture shock to a disease that is short-lived and mild for some and long-lasting and deleterious for others. Following Oberg, other researchers described this phenomenon, each focusing on only some aspects of what we now consider culture shock. In 1977, Taft reviewed the various descriptions and specified six aspects of culture shock: (1) confusion about how to behave in the new culture, accompanied by confusion about one's own feelings, values, and self-identity; (2) negative emotions directed toward the new culture, including surprise, anxiety, and disgust; (3) stress and strain caused by the energy required to adapt to the new culture; (4) feelings of loss regarding the old culture, including missing one's friends and family, profession, status, and possessions; (5) rejecting or being rejected by members of the new culture; and (6) feelings of powerlessness due to an inability to cope with the new culture.

Taft produced a fairly comprehensive summary of the potential negative reactions associated with culture shock. As the concept developed, some researchers suggested that culture shock may at times lead to positive outcomes in some individuals. For instance, one potential result of intense exposure to another culture is to synthesize the most positive aspects of both the old and new cultures and become a bicultural individual, even after an initial period of culture shock (e.g., Ward, Bochner, & Furnham, 2001).

The understanding of culture shock has increased immensely since the early theorizing; a number of well-established psychological theories have been applied to the understanding of culture shock. In their 2001 scholarly book *The Psychology of Culture Shock*, Ward, Bochner, and Furnham present a thorough review of the diverse perspectives used to comprehend culture shock. They also describe how we can understand the effects of culture shock on various groups of people: tourists, sojourners (between-society travelers whose stay is temporary such as overseas students, businesspeople, military personnel, missionaries, and diplomats), immigrants, and refugees. Furthermore, they discuss methods of training to prevent or diminish the intensity of culture shock in individuals who have time to prepare prior to traveling.

See also culture.

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Curiosity

Curiosity is an example of what some emotion theorists (e.g., Oatley, 2004) call an *aesthetic emotion.* These emotions do not so much arise out of interpersonal interactions (although they can), but rather, tend to arise in interactions with the physical world, the world of ideas, or other domains of life. Curiosity is an interest in ongoing experience (Peterson & Seligman, 2004). People who are curious enjoy and seek variety,

novelty, and challenge. They have a need for knowledge and new experiences. Learning something new, having a novel experience, or fully understanding something for the first time is fulfilling, even thrilling, for the curious person.

Peterson and Seligman (2004) describe the history of theory about curiosity, beginning in the late 1800s with American psychologist William James's discussion of different types of creativity: novelty seeking and scientific or intellectual curiosity. This dual model of curiosity is still applied in theorizing and research on curiosity. Other theoretical approaches have included viewing curiosity as a drive, understanding curiosity from a cognitive viewpoint (wherein curiosity functions to aid the individual in making sense of himself and the world) and evolutionary viewpoints that focus on the potential survival value associated with being curious.

Curiosity is a personality trait: individuals differ in the degrees to which they are curious. In most research, curiosity is associated with other positive traits or with positive outcomes. For example, curiosity is linked to well-being (Gallagher & Lopez, 2007), perceived control and below-average levels of perceived stress (Cacioppo, Petty, Feinstein, & Jarvis, 1996), and emotional intelligence (Leonard & Harvey, 2007). Many curious people—scientists, explorers and adventurers, artists, and others—use their curiosity in ways that ultimately benefit society through discoveries or inventions, inspirational acts, artistic productions, and so forth. For this reason, some researchers have studied factors that encourage the development of curiosity in individuals (for a review, see Peterson & Seligman, 2004).

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D

Dance Therapy

Dance rituals have been used therapeutically in several ancient cultures. For example, the Zar is still practiced (primarily by women) in Egypt, Sudan, Ethiopia, and elsewhere in the Middle East. A similar healing dance ritual known as Macomba is practiced in Brazil. Traditional therapeutic dance rituals are based on different premises, including resolving possession by a spirit or Jinn, healing psychosocial or physical sickness, or reestablishing harmony or balance within an individual or community. Modern dance therapy, sometimes referred to as dance/movement therapy (D/MT or DMT), was first developed in the 1940s by dancer Marian Chace, who later founded the American Dance Therapy Association (ADTA; founded 1966). The ADTA defines DMT as "the psychotherapeutic use of movement as a process which furthers the emotional, social, cognitive, and physical integration of the individual." DMT is based on the theory that movement and emotion are interdependent; the goal of DMT is the "holistic integration of emotional, spiritual, and cognitive selves with the environment" (Ritter & Low, 1996).

Dance therapists work in a variety of settings, including schools, nursing homes, medical and mental health settings, day cares, health promotion programs, and private practice. Dance therapy is used with people of all ages and backgrounds, including children and the elderly, and can be done in individual, group, and family therapy contexts. It has been used to treat anxiety disorders, schizophrenia, and developmental disabilities and to facilitate emotional expression and improve communication in people who have difficulties with verbal communication (e.g., elderly people with dementia). Personality function or dysfunction (e.g., in people with schizophrenia or personality disorders) can be assessed by looking at characteristics of body movement. DMT has been used to help children with emotional disturbances to express their experiences (Nyström & Lauritzen, 2005). Dance Therapists Registered (DTR) are master's-level therapists with specialized training and 700 hours of supervised clinical experience; Academy of Dance Therapists (ADTR) have completed 3,640 hours of supervised clinical work in an agency, institution, or special school.

Dance therapy is considered an effective treatment for people with various developmental, medical, social, physical, and psychological problems. Some studies on

the effectiveness of dance therapy show promising results; however, much of the research used case studies or small sample sizes, lacked control groups, and/or did not collect quantifiable data. Further well-designed research is needed to explore the effectiveness of dance therapy with different populations, in different settings, and for various diagnoses. Although some dance therapists have stated that DMT helps children with autism, evidence does not support that claim (Ritter & Low, 1996).

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Charles Darwin (1809–1882)

Charles Darwin was born in 1809 in Shrewsbury, Shropshire, England, the fifth of six children of Robert Darwin, a physician, and Susannah Wedgwood Darwin, the daughter of the famous potter Josiah Wedgwood. When Charles was eight years old, his mother died. His father did not remarry, and Charles was cared for by his older sisters and his father.

Darwin was not a particularly good student as a child, although he developed an early affinity for science, particularly biology and chemistry, and enjoyed nature, making observations, and collecting specimens. When Darwin was 16, his father sent him to Edinburgh to study medicine. Darwin was not interested in this career, and after two years, he and his father compromised: Darwin would study for the Church at Christ's College, Cambridge, and become a country parson. Darwin studied at Cambridge from 1828 to 1831. He did well in his courses, but a primary passion of his was collecting specimens in nature, as he had done as a child. He soon met professor of botany Reverend John Henslow, and the two of them and others began to hold evening discussions at Henslow's house. At the end of his stay at Cambridge, while Darwin was on a trip in North Wales, he received a letter from Henslow. The captain of the HMS *Beagle* was in need of a companion and naturalist to accompany him on a trip to study the natural environment in South America. The captain, Robert FitzRoy, had first asked Henslow, who refused and who recommended Darwin. After FitzRoy and Darwin met, it was agreed that Darwin would make the trip, which was scheduled for two years' duration. The voyage lasted four and a half years.

Darwin's duty was to collect all specimens of interest, which included rocks, fossils, plants, fish and other marine life, insects, birds, and mammals; many specimens were novel and strange to Darwin. He also made copious notes of observations about geology, flora, and fauna—all th[illegible]. He sent regular reports and specimens to Henslow. Darwin soon learned [illegible] his reports were [illegible] quite an impression

in scientific circles, and by the time he returned to England in 1836, he was considered a distinguished scientist. The voyage had made his career.

All along, Darwin was trying to make sense of his observations, and by 1838 was already formulating many of the ideas of the theory of evolution. In the meantime, he had become interested in marrying, and in 1839, he married his cousin Emma Wedgwood. Between 1839 and 1856, they had 10 children. Darwin studied and wrote prolifically during most of his life. It was not until 1859, however, that he published *On the Origin of Species.* The book was met with controversy, and for the next decade or so his work was heavily criticized by some and admired by others. Over the next two decades Darwin published five books on plant physiology, one on earthworms, and two other general books related to evolution (*Variation under Domestication* and *Descent of Man*).

In 1872 Darwin published his classic book on emotion, *The Expression of the Emotions in Man and Animals.* In this volume Darwin described and illustrated his and others' observations of emotional expressions in humans and animals, demonstrating some similarities between the expressions of humans and the expressions of some animals. For example, he described and graphically represented that a threatened dog or cat displays a snarling expression that looks similar to the angry expression of a human. As another example, he presented drawings of the *Cynopithecus niger* (a type of monkey) in a "placid" condition, during which it is expressionless, and immediately after being caressed. In the latter expression, the monkey appears to be smiling, and its face looks similar to the face of a happy person. Darwin argued that the existence of these similarities demonstrates that emotional expression must have evolved through natural selection in the same way that other characteristics evolved. He further contended that the expressions must serve a function; they enhance survival of the organism.

Despite the controversy of some of his work, especially *On the Origin of Species*, Darwin was and is widely recognized for his contributions to science. For instance, in 1853, the Royal Society awarded him with a Royal Medal for work that he did on barnacles in the 1840s and 1850s and for his contributions to geology. A number of geographical features were given his name, for example, Mount Darwin in the Andes, Darwin Sound in British Columbia's Queen Charlotte Islands, and Port Darwin in Australia. More than 9 genera and 120 species have been named after Darwin ("Darwin 200 Years," n.d.). In 2000, a picture of Darwin replaced Charles Dickens's picture on the 10-pound note of the Bank of England. There are many other examples of commemorations of Darwin.

British psychiatrist John Bowlby, who is famous for his work on the attachment relationship between infants and their caregivers, wrote a biography of Charles Darwin, *Charles Darwin: A New Life*, published in 1990. Bowlby was especially interested in Darwin's ill health, which presented from about age 30 to 60. His symptoms were largely gastrointestinal; he experienced abdominal pain, flatulence, vomiting, and other symptoms that caused much pain and discomfort and that affected his sleep. The cause of Darwin's illness has been a subject of debate among all scholars interested in Darwin's life; the primary disagreement is whether the condition was of organic or psychological origin. Bowlby argues that the symptoms were of psychological origin, and his biography of Darwin is [illegible] focused on his emotional life, family relationships, and medical problems. Bowlby suggests that Darwin's

childhood and adolescence—in particular the death of his mother and the strict and critical attitude of his father—led to Darwin's symptoms. After about age 60, Darwin's health improved. He died at age 73.

See also animals, behavior and emotion, John Bowlby, deimatic, Paul Ekman, evolutionary psychology (human sociobiology), facial expression, genetics, nonverbal expression, primates, smiling, Edward O. Wilson.

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Deep Breathing

Deep breathing is a technique that can be used to relax oneself quickly, and practicing deep-breathing exercises regularly may produce beneficial health effects over time. Breathing is the way that humans obtain oxygen, which is needed for all body tissues, and expel the waste product carbon dioxide. When the lungs receive oxygen, small blood vessels transport the oxygen to the heart. The heart then pumps oxygen-enriched (oxygenated) blood to all body tissues. The body tissues receive the oxygen and transfer carbon dioxide (waste) to the blood, which is sent back to the heart, then back to the lungs and exhaled.

Davis, Eshelman, and McKay (2008) describe two types of breathing: chest breathing and abdominal (diaphragmatic) breathing. Chest breathing is high in the chest, involves shallow breaths, and tends to be associated with anxiety or other emotional disturbances. Abdominal breathing is low, involving the entire lung capacity. The diaphragm (large muscle below the lungs) expands, allowing for maximal intake and expelling of air. This type of breathing is natural in infants and in most sleeping adults, but many of us engage in the shallower chest breathing for significant periods of our waking hours.

A variety of breathing exercises have been developed for stress management and general health. How-to instructions are described in Davis et al.'s (2008) book *The Relaxation and Stress Reduction Workbook.* The exercises instruct an individual in slow, deep breathing that involves assuming a relaxed posture, awareness of one's breathing, and perhaps imagery or counting of breaths. Deep breathing is often utilized in other stress management techniques, including meditation, progressive muscle relaxation, and autogenics.

In early theorizing and research on diaphragmatic breathing as a treatment for physical and psychological conditions, Poppen (1988) reported that diaphragmatic

breathing would be especially helpful for asthma, hypertension, and migraine and, in the domain of emotional disorders, for panic attack. To date, there are still very few studies with outstanding methodologies that demonstrate the helpfulness of deep breathing as a treatment for panic (Meuret, Wilhelm, Ritz, & Roth, 2003). Although many researchers continue to view diaphragmatic breathing as a promising treatment for medical and psychological disorders, further research is needed to produce conclusive results.

See also autogenic training, meditation, progressive muscle relaxation, stress.

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Defense Mechanisms

According to Sigmund Freud, many of our characteristics, impulses, wishes, and some external facts are too painful, anxiety provoking, or dangerous to allow into the conscious mind. As Freud discussed over 100 years ago, to function, these facts, feelings, and thoughts are kept hidden in the unconscious mind through mechanisms of defense (Freud, 1894/1962). Defense mechanisms exist to protect one from knowing the stark truth about oneself and from having to face unpleasant realities. They also help us to resist the impulse to act out on these forbidden wishes.

According to Freudian theory, one of the three main components of the mind, the rational, self-preserving ego, utilizes defense mechanisms. To achieve this, however, the ego must remain strong. In some cases, an individual can become overwhelmed by illness, trauma, stress, or other situations, and defense mechanisms begin to break down. As this happens, the individual experiences anxiety, ranging in intensity from a mild uneasiness to a full-blown, terrifying anxiety attack. Anxiety can be helpful because it motivates an individual to act in ways to reduce anxiety. Anxiety often prevents the expression of the forbidden impulse; for instance, an individual, while experiencing anxiety, may avoid his boss because he is afraid that he may yell at his boss if they come in contact with one another. Sometimes, however, the defense mechanism and anxiety system break down entirely, and the individual acts on impulses in a dramatic way. For example, the nice, shy neighbor next door who suddenly goes to McDonald's and shoots everyone in sight may have experienced such a breakdown.

The fundamental defense mechanism is repression. *Repression* involves pushing a fact—such as an action performed in the past or the fact that one was diagnosed with cancer—or a feeling, thought, or memory into the unconscious mind. For instance, an individual may have feelings of hatred toward his brother. These feelings are painful, threatening to destroy family harmony, and the individual's ego represses the feelings into the unconscious mind. Now the individual does not consciously feel hatred. He may have an uneasy feeling arou[illegible]s brother witho[illegible]g able

to pinpoint the exact nature or cause of the feeling, or he may even feel an exaggerated love (or both unease and exaggerated love). Additionally, Freud said that when someone is repressing something, he often represses related feelings and thoughts as well because they may remind him of the repressed impulse or memory. So, for example, the man who hates his brother may end up avoiding his brother to help maintain the repression. And because his other family members often speak about his brother, he may end up becoming socially withdrawn from them to maintain the repression. And if the hatred is strong enough, he may even avoid his spouse's brothers because they may remind him of his brother, and so on. Repression may also work with a memory. Suppose an individual behaved in an embarrassing way at a party with a few coworkers. He drank a little too much, began singing at the party, told all present that he loved them, and had to be carried out and driven home. He hates to think about the party and tries to forget by repressing. To be successful in the repression, he may end up avoiding his work friends.

Repression is a powerful defense mechanism that utilizes a great deal of psychological energy. Freud said that we have a limited amount of psychological energy, and therefore we can repress only so much without running the risk of building a dam that will certainly burst. As protection, the mind also utilizes other defense mechanisms. Examples are projection (attributing one's own qualities to someone else), rationalization (concocting rational reasons for engaging in unacceptable behavior), reaction formation (converting an impulse into its opposite, for instance, hate into love or vice versa), and others. Anna Freud (1936) thoroughly described several common defense mechanisms. Cramer (2006) and Cramer and Davidson (1998) reviewed defense mechanisms, discussed research, suggested areas of further research, and identified situations in which particular defense mechanisms may be helpful or harmful.

See also anxiety, Anna Freud, Sigmund Freud, projective tests, psychoanalytic perspective, psychodynamic psychotherapy and psychoanalysis, the unconscious mind.

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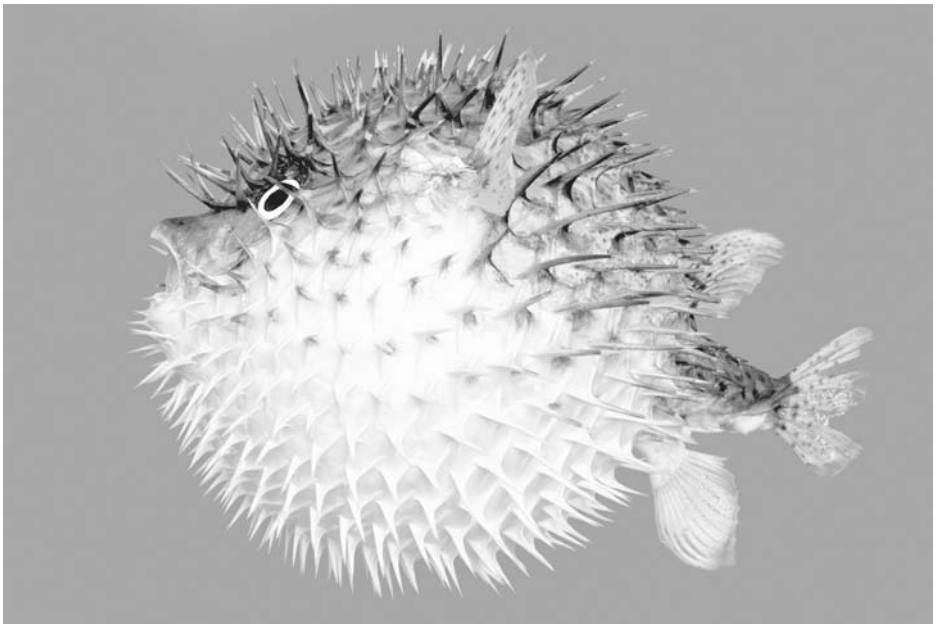
Deimatic

A deimatic posture or threat display (from the Greek *deimatos*, meaning "frightening") is a type of warning behavior or posture exhibited by an animal to intimidate another animal (Colman, 2001). Deimatic behavior includes things such as a cat (or



Side view of a threatened blow fish or porcupine fish. This sort of behavior (puffing up to larger size) is a type of warning. (iStockPhoto)

other animal such as a blowfish or toad) puffing itself up to appear larger and more intimidating than it is, a skunk rising up on its hind legs prior to spraying, or a rattlesnake making a rattling noise prior to striking (Allaby, 1999).

Deimatic display can cause the predator to hesitate, allowing the animal being threatened to evaluate the situation and make a decision whether to freeze, attack, submit, or flee (LeDoux, 1996). The deimatic display may frighten away the potential predator, relieving the prey of the need to flee or fight. A threat posture, indicating what an animal (the actor) *may* (not necessarily *will*) do next, creates some ambiguity; the actor's next action will depend in part on how the reactor responds. This uncertainty may allow the actor to avoid a costly confrontation (Marks, 1987). Game theorists have used a cost-benefit analysis approach to predict the probability of any given course of action in a confrontation between two animals (e.g., Hurd & Enquist, 1998).

In many species, the deimatic display is directly related to an instinctive or automatic physiological fight-or-flight response. For example, when a human glimpses a snake, even before consciously registering the presence of the snake, and long before evaluating whether the snake is dangerous and deciding what course of action to take, instinctive physiological changes (the fight-or-flight response) occur (LeDoux, 1996). These autonomic nervous system changes may include increased heart rate and blood pressure, increased perspiration, dry mouth, or a tight sensation in the stomach, goose bumps, or piloerection (hair standing on end). Piloerection (which causes a cat's hair to stand on end) in combination with a specific posture (arched back and erect tail) and hissing and spitting creates the deimatic display of cats (Marks, 1987). Piloerection may be related to the reason porcupines' quills raise off its skin, giving it

a bristling appearance when threatened, as well as deimatic fin extensions in fish and feather flashing in birds (LeDoux, 1996). An animal's deimatic display can increase its apparent size by inflating its body (by swallowing air or water), spreading its wings, raising its appendages, fluffing its hair or feathers, or rearing up. It may make itself appear more intimidating by baring its teeth, beating its chest, hissing, growling, snorting, spitting, or rattling its tail (Marks, 1987). A human threat display may include standing up at full height, chest expansion, clenching fists, and various threatening facial expressions and tones of voice. Culturally evolved deimatic displays include wearing frightening masks or costumes; bluffing can be used to frighten away enemies and disguise can be used to avoid capture. Animals may engage in group threat displays such as when male musk oxen form a protective, outward-facing circle around the females and calves and display their sharp horns (Marks, 1987).

See also animals, autonomic nervous system, Charles Darwin, nonverbal expression, primates, stress.

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Delta Society

The Delta Society is a human services organization dedicated to improving people's health and well-being through positive interactions with animals. The Delta Society's vision statement holds that "people are healthier and happier because companion, service, and therapy animals enrich and positively impact their everyday lives." To achieve its mission, the Delta Society educates health care and other professionals about how to incorporate animals into goal-directed treatment or visiting animal activities. They provide high-standard therapy animal training and curricula and inspire people to volunteer with their pets in their local communities. By providing service animal information and resources, Delta empowers individuals with disabilities to maximize their quality of life. The Delta Society advances knowledge about research that reflects how interactions with animals have a positive effect on people's lives.

The Delta Society brings together individuals who share a common passion—a love of animals and people. The Delta Foundation was founded in Portland, Oregon, in 1977 by members of the human services and veterinary industries. It focused on funding the first credible research on why animals are important to the general population and how they affect human health and well-being. In 1981, the organization changed its name to Delta Society.

Research findings have shown that having an animal in one's life may help reduce blood pressure, lower stress and anxiety levels, and stimulate the release of endorphins (which make people feel good). In 1981, the American Veterinary Medical Association's Human-Animal Bond Task Force was formed to review the veterinary profession's role in recognizing and promoting the human-animal bond. Testimony of Delta Society leaders was instrumental in helping pass the Housing and Urban Rural Recovery Act of 1983, which sent a strong public message recognizing the therapeutic value of pets in the lives of Americans.

In the late 1980s and 1990s, new programs were developed to provide direct services at the community level. The National Service Dog Center advocates for the acceptability of service dogs in public places. It also helps people with disabilities understand their rights and find a service dog trainer. Through the Pet Partners program, volunteers with pets (dogs, cats, rabbits, birds, etc.) bring joy, compassion, and inspiration to people in hospitals, nursing homes, rehabilitation centers, schools, and other institutions through animal-assisted therapy activities. *Animal-assisted therapy* involves the use of animals or pets to provide therapeutic activities for humans. This differs from *pet therapy*, which refers to therapy for pets (e.g., to help deal with a pet's behavioral issues).

See also animal-assisted therapy, Animal Behavior Society, pet therapy.

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Delta Society Web site: http://www.deltasociety.org/

Depersonalization

Depersonalization is a feeling that one's physical sensations, emotions, behaviors, or other psychological characteristics are separate from oneself. When experiencing this state, one has the feeling of watching oneself behave without controlling the actions (American Psychiatric Association, 2000). Depersonalization can be quite disturbing; the world seems less real, as if one is living in a dream. It is a prominent and chronic symptom in dissociative disorders, for instance, dissociative identity disorder (formerly known as multiple personality disorder). Chronic depersonalization such as is present in dissociative disorders typically occurs when someone has suffered extreme trauma or ongoing extreme stress. Depersonalization may arise as a symptom in a number of other psychiatric disorders, including clinical depression, bipolar disorder, panic disorder, posttraumatic stress disorder, acute stress disorder, obsessive-compulsive disorder, and borderline personality disorder. In these cases, depersonalization is more often temporary and is associated with periods of extreme anxiety or stress.

Depersonalization may have organic causes. It may be a symptom of neurological diseases such as Parkinson's disease, lyme disease, and multiple sclerosis. It may also be present when one is taking drugs (prescribed or recreational), in which case it may be considered pleasant, unpleasant, or both. Depersonalization is a symptom of withdrawal from some drugs.

A state that bears some similarity to depersonalization is dissociation. In *dissociation*, one fails to experience oneself as whole or integrated; one does not have a clear sense of identity. The dissociated state is often associated with memory [illegible] regarding important personal characteristics or experiences [illegible] depersonalization

is not associated with memory or complete identity loss; one simply feels detached from one's mental processes or body but maintains contact with reality.

According to Simeon (2004), depersonalization is the third most common psychological symptom after anxiety and depression. Examples of depersonalization are vividly described in both literature and personal memoirs. For instance, Susanna Kaysen details the depersonalized state in her autobiography *Girl, Interrupted.*

See also acute stress disorder, bipolar disorder, borderline personality disorder, depression, dissociation, obsessive-compulsive disorder, panic disorder, posttraumatic stress disorder.

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Depressant Drugs

Depressant drugs or medications act as depressants on the central nervous system (CNS). Sometimes referred to as sedatives or hypnotics, they slow normal brain function. Depressants include barbiturates, benzodiazepines, alcohol, cannabis (marijuana), and some club drugs (e.g., Rohypnol, ketamine). Most CNS depressants act on the brain by increasing activity of the neurotransmitter (chemical messenger) gamma-aminobutyric acid (GABA). Increasing GABA activity in the brain can produce drowsiness or a calming effect. CNS depressants can cause impaired motor coordination, slurred speech, shallow breathing, fatigue, frequent yawning, irritability, and intoxication.

Barbiturates (e.g., Nembutal, mephobarbital) are used to treat anxiety, tension, and sleep disorders and have been used to treat seizure disorders. Street names for barbiturates include barbs, blues, downers, gamma hydroxybutyrate (GHB), goof balls, reds, rohypno, sleepers, and yellow jackets. High doses of barbiturates can cause unpredictable emotional reactions and mental confusion. Long-term use can cause chronic tiredness, vision problems, dizziness, slowed reflexes, depression, intense mood swings, and disrupted sleep cycles.

Benzodiazepines (e.g., Valium, Librium, Xanax, Halcion) may be prescribed to treat anxiety, panic attacks, seizure disorders, and insomnia. Street names include date rape drug, nerve pills, roofies, tranks, and Xanies. Benzodiazepines activate the neurotransmitter dopamine (a chemical messenger) in the reward pathways (limbic system) of the brain. Mixing benzodiazepines with other drugs, such as alcohol, can be fatal. Long-term use of benzodiazepines can cause memory impairment, depression, respiratory and cardiovascular problems, irritability, drowsiness, poor concentration, muscle weakness, vertigo, impaired motor coordination, and mental confusion. Withdrawal from benzodiazepines can cause anxiety, perceptual disturbances, depression, psychosis, and seizures.

Withdrawal from alcohol can cause nausea, tinnitus (ringing in the ears), visual disturbances, muscle pain, hallucinations, agitation, itching, parasthesias (tingling or a pins-and-needles feeling), tremors, sweating, depression, anxiety, insomnia, and nightmares. In some cases of long-term alcohol abuse, withdrawal can result in delirium tremens (DTs), which is marked by confusion, disorientation, delusions, hallucinations, tremor, fever, sweating, rapid heartbeat, or death (rarely). Several weeks of continuous alcohol consumption can cause alcohol epilepsy ("rum fits"), resulting in grand mal seizures lasting about 36 hours. It can be dangerous to combine benzodiazepines with alcohol; this combination is what caused Karen Ann Quinlan's coma (Preston, O'Neal, & Talaga, 2008).

The main active ingredient of marijuana (*Cannabis sativa*) is THC (delta-9-tetrahydrocannabinol). It is also known as pot, grass, weed, herb, or Mary Jane. Smoking marijuana increases blood pressure and heart rate and can have harmful effects on the lungs and heart. Marijuana use can cause distorted perceptions, impaired coordination, difficulty in thinking and problem solving, and problems with learning and memory (National Institute on Drug Abuse, 2005a).

CNS depressant club drugs include GHB, Rohypnol (flunitrazepam), and ketamine. Rohypnol is a benzodiazepine which is not approved for use in the United States. GHB (Xyrem) was approved by the U.S. Food and Drug Administration in 2002 for use in the treatment of narcolepsy (a sleep disorder). GHB is also used by bodybuilders to reduce fat and build muscle. GHB and Rohypnol have been used to facilitate date rape (or acquaintance rape). GHB has sedative effects at high doses, which may result in sleep, coma, or death. Rohypnol can produce amnesia for events experienced while under the influence of the drug (National Institute on Drug Abuse, 2008). Ketamine is a dissociative anesthetic, used mostly in veterinary practice. Ketamine (with effects similar to those of PCP) distorts perceptions of sight and sound and produces feelings of detachment from one's environment and from oneself. At low doses, ketamine can cause impaired attention, learning ability, and memory. At higher doses, it can cause dreamlike states, hallucinations, delirium, amnesia, impaired motor function, high blood pressure, and potentially fatal respiratory problems (National Institute on Drug Abuse, 2008). Combining GHB with alcohol or other drugs can result in nausea, breathing difficulties, or overdose. Rohypnol can be lethal when mixed with alcohol or other CNS depressants.

CNS depressants have abuse potential and create tolerance: with long-term use, larger doses of the substance are required to achieve the same effects. Long-term use can result in withdrawal when the drug is discontinued. Withdrawal from CNS depressants can cause seizures and other life-threatening consequences (National Institute on Drug Abuse, 2005b). Because of the potential for serious medical complications of discontinuing some CNS depressants, treatment for abuse or dependence may necessitate medically supervised detoxification. Other treatments may consist of a combination of 12-step programs (such as Alcoholics Anonymous), family therapy, group or individual counseling, and pharmacotherapy. Medications used to treat alcohol dependence include Zofran (ondansetron), naltrexone (Revia, Trexan), disulfram (Antabuse), or acamprosate.

See also alcohol abuse and alcoholism, Alcoholics Anonymous, benzodiazepine, detoxification, family therapy, substance abuse, [illegible] programs.

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Depression

The word *depression* comes from the Latin roots *de* (down) and *pressum* (press) and literally means "to press down." Psychologically, it signifies a mental or emotional state that may include sadness, hopelessness, despondency, anhedonia (inability to experience pleasure or enjoyment), or dysphoria (feeling unwell or unhappy). Depression falls into three main groups: depression in response to a situation or circumstances (reactive depression), depression in response to a death or major loss (grief), and clinical depression (Preston, O'Neal, & Talaga, 2008). Reactive depression is characterized by sadness, despair, and disappointment. Feelings of depression are a normal reaction to loss, grief, trauma, and some difficult life circumstances. However, depressive symptoms continuing for a significant period of time, having negative impacts on functioning (social, occupational) or involving marked erosion of self-esteem, may signify clinical depression. Other signs of clinical depression may include sleep or appetite disturbances, weight gain or loss, early morning awakening, agitation, irritability, and suicidal thoughts or attempts (Preston et al., 2008).

Diagnoses are usually made by qualified health professionals using criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000) or the *International Statistical Classification of Diseases and Related Health Problems* (*ICD*; World Health Organization, 1990). As different cultures may perceive, interpret, and express emotions differently, clinicians should consider culture (e.g., cultural identity and acculturation) when evaluating depressive symptoms. Instruments that can assist in the diagnosis of a depressive disorder include the Beck Depression Inventory, Children's Depression Inventory, Hamilton Depression Scale, and Minnesota Multiphasic Personality Inventory. Other instruments are used primarily by researchers (e.g., the Depression Anxiety Stress Scale 42).

Types of clinical depression include major depressive disorder (MDD), bipolar disorder (including bipolar I, bipolar II, and cyclothymia), dysthymia, and seasonal affective disorder (SAD). Bipolar disorders involve alternating periods of depressive and manic (or hypomanic) episodes. Physiological conditions that can be accompanied by depression include Parkinson's disease, Alzheimer's disease, thyroid disease, diabetes, seizure disorder, sleep apnea, lupus, multiple sclerosis, stroke, brain trauma, and HIV/AIDS. Depression can be a significant factor in chronic pain and cancer and can be comorbid with other mental health conditions such as posttraumatic stress disorder, schizoaffective disorder, attention-deficit hyperactivity disorder. Depression may accompany hormonal changes such as in premenstrual syndrome (PMS), premenstrual dysphoric disorder, postpartum depression, and menopause. Obsessive

symptoms can be caused by some drugs and medications (e.g., alcohol, marijuana, barbiturates) and can also occur during withdrawal from some drugs (e.g., stimulants, cocaine). When depression is caused by outside situations or circumstances (e.g., death of a loved one, loss of a job), it is known as *exogenous*; when there are no identifiable upsetting circumstances, it is known as *endogenous* depression. It is important to accurately identify the type of depression as treatment may differ for different depressive manifestations. Estimates of overall incidence of depressive disorders range from about 17 to over 20 percent of the population (Preston et al., 2008). Depression will probably affect 10 to 25 percent of women and 5 to 12 percent of men in the United States during their lifetimes (Agency for Healthcare Research and Quality, 2002). Although there are different proportions for different depressive disorders (e.g., MDD versus bipolar disorder), about twice as many women as men are affected. While only one-third of people in the United States seek treatment for symptoms of depression, treatment can be effective in up to 80 percent of those who seek treatment (Preston et al., 2008).

There are many theories about the causes of depression, including psychodynamic (Freudian) models, attachment, learned helplessness, and cognitive models (e.g., negative mental states and expectations). Depression is thought to be related to a number of factors, including environmental, biological, genetic, hormonal, and neurochemical. Depression may be due to imbalance of certain neurotransmitters (chemical messengers in the brain), including serotonin, norepinephrine, dopamine, acetylcholine, and gamma-aminobutyric acid (GABA). Some depressed people have been found to have elevated levels of cortisol (a stress hormone), deficiencies in brain-derived neurotrophic factor (a substance involved in keeping neurons healthy), cell death in the hippocampus (a brain structure), or atrophy in the anterior cingulate (in the frontal lobe of the brain). Extreme stress (including severe early abuse or neglect), poor nutrition, decreases in physical exercise, and reduced exposure to sunlight can result in or exacerbate depression (Preston et al., 2008).

The biopsychosocial model of depression considers (and treats) biological (e.g., genetic, hormonal), psychological, and social (e.g., family, interpersonal) factors. Effective treatments for clinical depression involve a combination of psychotherapy (e.g., psychodynamic, cognitive-behavioral), physical exercise, and medications. Antidepressant medications include selective serotonin reuptake inhibitors, tricyclics, monoamine oxidase inhibitors, and atypical antidepressants. Bipolar disorder is treated with different combinations of medications (e.g., mood stabilizers and antipsychotics). Antidepressants may be contraindicated in the treatment of bipolar disorder as they may induce manic states. Troublesome medication side effects may occur well before the onset of therapeutic benefits. Working closely with a qualified health care professional can help minimize side effects and increase benefits from medications and adjunctive therapies. Natural or complementary alternatives that have been explored for the treatment of clinical depression include St. John's wort (*Hypericum perforatum*) and SAMe (S-adenosyl-L-methionine). Evidence supports the use of St. John's wort as an effective treatment for mild to moderate depression; it has not been found to be effective in treating severe depression, seasonal affective disorder, or PMS (National Center for Complementary and Alternative Medicine, 2004). Studies found that SAMe was more effective than placebo but no more effective than standard antidepressant medication (Agency for Healthcare Research and Quality, 2002). There is a great deal of controversy regarding the effectiveness and

potential drug interactions of other complementary treatments such as L-tryptophan (a natural antidepressant found in foods such as turkey, potatoes, and milk), 5-hydroxytryptophan, melatonin, tyrosine, amino acids, vitamins, and minerals. Electroconvulsive therapy has been found to be effective in severe treatment-resistant cases of major depressive disorder, and full-spectrum light (phototherapy) has been found to be effective for some cases of SAD (Preston et al., 2008). Experimental treatments include vagus nerve stimulation and repetitive transcranial magnetic stimulation. Some individuals and their families find information and help through support groups (e.g., Depression and Bipolar Support Alliance).

See also anhedonia, antidepressant, bipolar disorder, cognitive therapy and cognitive-behavioral therapy, complementary and alternative medicine, depressant drugs, dysphoria, dysthymia, electroconvulsive therapy, endogenous depression, grief, hopelessness, hormones, light therapy, major depressive disorder, menopause, mood disorder, mood swings, physical activity (exercise) for depression, postpartum depression, Prozac (fluoxetine), sadness, seasonal affective disorder, selective serotonin reuptake inhibitor, serotonin, St. John's wort.

Further Readings:

Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/

National Center for Complementary and Alternative Medicine Web site: http://nccam.nih.gov/

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- Well-known people with depression include journalist Mike Wallace (CBS *60 Minutes*), author William Styron, comedian Drew Carey, and model and actress Margaux Hemingway (who committed suicide). President Abraham Lincoln, Queen Victoria of England, and Moses likely suffered from depression (Comer, 2010).
- It has been estimated that 7 percent of adults in the United States have a severe depressive disorder in a given one-year period. Although depression occurs across the entire life span, rates of depression vary by age as well as by gender, race/ethnicity, and socioeconomic status. In the United States, the median age of first occurrence of depression is 34. Among children, rates of depression are about equal in girls and boys. However, higher rates of depression for females begin to emerge in adolescence and persist into and throughout adulthood. It

has been estimated that up to 12 percent of men and up to 26 percent of women experience depression at some point in their lives (Comer, 2010).

Depression and Bipolar Support Alliance

The Depression and Bipolar Support Alliance (DBSA), formerly the National Depressive and Manic Depressive Association, is a nonprofit national organization specializing in providing care and support for people living with depression or bipolar disorder and their families. Founded in 1985, DBSA aims to facilitate the management and understanding of these illnesses by promoting early diagnosis, developing effective and endurable treatments, and discovering a cure. As an organization run by patients, DBSA focuses on meeting patients' needs for the latest and most understandable information and services. DBSA's main activities include offering support groups, education and advocacy, and research on depression and bipolar disorder. Through educational resources and programs, exhibit materials, and media activities, DBSA reaches almost five million people. Its educational materials offer up-to-date and scientifically based information with a message of hope and optimism. All materials are reviewed by patients to make sure that the contents are relevant to the needs of patients and their families.

DBSA also holds annual conferences, publishes in peer-reviewed medical journals, and sponsors surveys relevant to those living with mood disorders and practitioners concerned with these conditions. DBSA is actively involved in the media to reach the general public. DBSA consists of a small number of staff and operates with the guidance of a scientific advisory board (SAB), which comprises leading researchers and clinicians in the field of mood disorders. Those members of the SAB review all DBSA publications and programs to ensure medical and scientific accuracy. They also deliver presentations at DBSA conferences, are in charge of authoring peer-reviewed manuscripts on behalf of the organization, and take leading roles in the media.

As of 2009, DBSA had 17 state organizations and more than 400 chapters across the United States. DBSA also had a grassroots network of almost 1,000 support groups across the country, serving about 70,000 people every year. Online support groups and a toll-free information and referral line account for other important activities of DBSA. As of 2009, the toll-free information and referral line received 3,000 calls per month, and DBSA's Web site received over 23 million hits per year. The DBSA Web site reports that support groups connected with DBSA have been effective in increasing people's willingness to adhere to treatment and to attend support meetings.

To fulfill its mission to improve the lives of people living with depression or bipolar disorder, DBSA monthly dispenses as many as 20,000 educational materials to people requesting information about mood disorders without any charge. DBSA advocates for people living with mood disorders by taking part in congressional testimony in Washington, D.C. DBSA has advocated for increased research funding, insurance parity, patient confidentiality, increased attention for comorbid illnesses, and integrated treatment for dual diagnosis.

See also bipolar disorder, depression, major depressive disorder, mood disorder.

Further Reading:
Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/

Depression Anxiety and Stress Scales

The Depression Anxiety and Stress Scales (DASS), published in 1995 by Australian psychologists Sydney Lovibond and Peter Lovibond, measure three negative emotional states: depression, anxiety, and stress. These three states are common negative emotion disturbances which may overlap to varying degrees in an individual's experience. A primary purpose of the development of the DASS was to aid in determining the locus or loci of an individual's emotional disturbance and the severity of each of these three types of disturbance.

Each state is assessed by 14 items; each item is a primary symptom of the emotional state. When utilizing the standard instructions for taking the test, the scales measure relatively temporary states; the assessee (person taking the test) is instructed to rate the severity of each symptom for the past week. The scales may be adapted to measure enduring traits by instructing assessees to rate each item as they characteristically or typically feel. The test was designed to be useful for both researchers and clinical practitioners and is used in both contexts.

The DASS was carefully developed using a number of samples of people, including clinical samples. The DASS is clinically reliable, valid, and sensitive (Fischer & Corcoran, 2007). Because of its soundness, brevity, and concurrent measurement of three common negative emotions, it is a useful measure.

See also anxiety, depression, State-Trait Anxiety Inventory, stress.

Further Reading:
Psychology Foundation of Australia link to DASS: http://www2.psy.unsw.edu.au/groups/dass/

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René Descartes (1596–1650)

René Descartes was a French philosopher and mathematician best known for his statement "I doubt therefore I think, I think, therefore I am" (*dubito ergo cogito, cogito ergo sum*). He was born in Touraine, France, in 1596. His father was an advisor and assistant to the Parliament of Brittany, and his mother died before he was one year old. As a child, he studied at the Jesuit College Royal Henry-Le-Grand and was a good student, particularly in mathematics. After graduation, he entered the University of Poitiers and was awarded a law degree in 1616 at age 20.

Descartes chose not to pursue a career in law, instead joining the army of Prince Maurice of Nassau in Holland. There he met Isaac Beekman, who showed Descartes that mathematics could have applications in other fields. Over the next several years,

he moved throughout northern and western Europe, all the while developing his interest in mathematics and faith that mathematics held the key to an understanding of the world. He left military service in 1621 and moved to the Netherlands in 1628, which is where he spent the majority of his adult life. Descartes worked on at least two important philosophical treatises after moving to the Netherlands but did not publish for several years.

In 1635, he and a servant had a daughter together, and the daughter died five years later. Her death devastated Descartes. In 1646 he developed a friendship with Queen Christina of Sweden and dedicated his work about emotion to her: *The Passions of the Soul*, published in 1649. That year, he moved to Stockholm to be her tutor and died of pneumonia there one year later, in 1650. Descartes was 54.

The Passions of the Soul was Descartes's sole work that primarily addressed emotion. In it Descartes described the emotions, or passions. The main passions were love, hatred, desire, wonder, joy, and sadness. He wrote that the passions were separate from thought; were more primitive, base, and animal-like than thought; and often produced a negative effect on thought. Emotions were the result of interaction between mind and body, which Descartes saw as distinct from one another. Their interaction took place in the pineal gland at the base of the brain. Descartes also believed that emotions could be associated with physiological responses and could be evoked by external events.

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Description of René Descartes publications: http://www.library.nd.edu/rarebooks/collections/rarebooks/descartes_long_desc.shtml

Reference:

Descartes, R. (1649). *Les passions de l'âme* [The passions of the soul]. Paris: Jacques Besogne.

Desire

Desire is a motivational state often tied to directed, purposeful movement toward the object of desire. The goal of desire is possession of the object (possession may mean either physical possession, such as owning a car, or psychological possession, such as achieving a relationship with a person) or ability to engage in the wanted activity. Categories of the most common types of objects and activities that people desire are (1) objects that are likely related to an individual's well-being and that increase one's control over the future such as desire for money, a job, or information; (2) abstract states that are often related to an individual's subjective values such as independence, justice, freedom, or equality; (3) interpersonal objects and states and events related to those objects such as a spouse, friends, children, love, companionship, and support; and (4) sex (Berscheid & Heller, 1999).

Although many cases of desire are linked with action toward the object, desire can be present even without action. As Lewin and colleagues (1944) found, if the object is viewed as unattainable, people will not take action to attain the object. Thus, as Berscheid and Heller (1999) discuss, lack of movement toward an object does not necessarily indicate lack of desire. However, Heider (1958) argued that if the object is viewed as unattainable over a long period of time, the individual will eventually lose desire for the object.

Scholars disagree about whether desire should be viewed as an emotion. Berscheid (1983) and Mandler (1975) argue that it is not technically an emotion; however, the entire context of desire involves a number of emotions. For instance, while pursuing the goal, the individual may feel a variety of emotions: hope, anxiety, angst, and so forth. If the desire is satisfied, joy may result. Conversely, if the desire remains unsatisfied over a period of time, the individual may feel anger, despair, or other emotions.

As American social psychologist Fritz Heider (1958) discussed, desire is clearly linked in people's minds with pleasure, in particular, the anticipation of pleasure, and eventually (the person hopes), the experiencing of pleasure when the desired object is attained. People may engage in manipulations of situations to control the pleasure associated with desire. As Heider clarifies, being in a state of desire means that a distance exists between the individual and the desired object; it means that the individual wants to have, do, or feel something that she does not currently have, do, or feel. The distance between self and object can be manipulated, perhaps by approaching then withdrawing somewhat, to intensify desire. Such maneuvering may motivate the individual to work harder to attain the object.

See also libido, lust, pleasure.

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Detoxification

Detoxification is the elimination of toxins from the body. Detoxification occurs during withdrawal from an addictive substance such as alcohol or heroin. The detoxification process may be implemented in a systematic fashion, as a component of treatment for addiction.

Withdrawal from alcohol and some other drugs can be dangerous, possibly fatal. The alcohol withdrawal syndrome may involve any of a variety of symptoms, including sleep disturbances, anxiety, tremors, sweating, headache, nausea, vomiting, diarrhea, hallucinations, and seizures; seizures may result in death. Withdrawal symptoms vary based on the client's age, genetics, extent of drug use, length of addiction, number of prior withdrawals (withdrawal symptoms increase in severity with each withdrawal), and other factors.

The detoxification process may occur on an outpatient basis or in a clinic or other treatment center, typically over a period of days or weeks. It may be drug-free, or medications may be administered to treat symptoms of withdrawal. For instance, in the case of alcohol withdrawal, drugs that bear some chemical similarity to alcohol, particularly the benzodiazepines, are often used. These include Valium and Librium,

may be administered during detoxification. Administration of these drugs and tapering them gradually eases the withdrawal symptoms. In many cases, after a detoxification, the body can return to normal or near-normal functioning.

Detoxification is much more likely to be effective if it is followed by other treatment, such as psychotherapy, and if social support and stable living circumstances are available to the patient (e.g., van den Brink & Haasen, 2006). Detoxification is a treatment that involves a goal of abstinence or complete withdrawal from the drug, with the expectation that the individual will not use the drug in the future. Drug dependence can be treated through management or maintenance, however, particularly in cases where the individual is severely dependent. There are various approaches to treating drug dependence. Harm reduction approaches seek to minimize risky behaviors while improving functioning, while other treatment approaches see abstinence as the goal. According to some experts (e.g., van den Brick & Haasen, 2006), nonabstinence treatment goals may be most appropriate in some cases.

See also alcohol abuse and alcoholism, substance abuse.

Further Readings:

Encyclopedia of mental disorders: http://www.minddisorders.com/A-Br/Alcohol-and-related-disorders.html

Washton, A.M., & Zweben, J.E. (2008). *Treating alcohol and drug problems in psychotherapy practice: Doing what works.* New York: Guilford.

Reference:

van den Brink, W., & Haasen, C. (2006). Evidenced-based treatment of opioid-dependent patients. *Canadian Journal of Psychiatry, 51*, 635–646.

Developmental Crisis

A *developmental crisis* (DC) takes place in the normal flow of human growth and development (e.g., birth of a child, retirement). While there are many developmental theories (including those of Piaget, Maslow, and Kohlberg), those of Erik Erikson figure prominently in the idea of the DC. Erikson, a Danish-German-American psychologist, described eight stages of the human life cycle, from infancy through old age. According to Erikson (1950), each stage has its own unique developmental tasks that may prompt a crisis; resolution of the crisis is necessary to achieve maturity at the next stage of development. Erikson's eight stages are as shown in Table 5.

Table 5: Erikson's Eight Stages of Development

Stage	Age (years)	Key Developmental Tasks
Infancy	0–2	*Trust versus mistrust.* Failure to develop trust at this stage will affect all future attachments and relationships.
Early childhood	2–4	*Autonomy versus shame and doubt.* In this critical separation task, the child finds a unique personal space among demands imposed by family and culture.
Preschool/kindergarten	4–7	*Initiative versus guilt.* The child begins to di[illegible]is or her own life.

(continued)

Table 5: Erikson's Eight Stages of Development (*continued*)

Stage	Age (years)	Key Developmental Tasks
Elementary school	7–12	*Industry versus inferiority.* Developing a sense of competence and capability.
Adolescence	12–19	*Identity versus role confusion.* Finding a separate identity as an individual.
Young adulthood	19–30	*Intimacy versus isolation.* Finding a sense of closeness with others.
Middle adulthood	30–60	*Generativity versus stagnation.* The adult at this stage experiences a need to give back to children and society.
Later adulthood	60+	*Ego integrity versus despair.* The mature adult is able to accept failures and successes and integrate them into a meaningful life pattern.

Source: Yvette Malamud Ozer, based on Erikson, E. H. (1950). *Childhood and society.* New York: W. W. Norton.

Erikson maintained that a supportive family and cultural environment are necessary to accomplish the developmental tasks of childhood: developing a sense of trust, autonomy, and initiative. Each stage is a process of negotiating a balance between separation and attachment (connection with others). Stage theories have been criticized as suggesting that the human life span has distinct, sequential, nonoverlapping life stages. While some tasks are more prominent in certain stages, all developmental tasks exist throughout the life cycle (Ivey, Ivey, Myers, & Sweeney, 2005). The *identity crisis*—finding an individual identity—is a major task of adolescence that must occur before true intimacy can occur in adult life (Kroger, 1996). During this stage, adolescents may experiment with different identities and roles (e.g., different ways of dressing, listening to different types of music, associating with different groups of peers), experiencing the reactions of peers and family in the process of defining themselves.

A *midlife crisis* is a period of self-doubt, of reflecting on accomplishments and reevaluating life goals, as adults sense the passing of youth and imminence of old age. A midlife crisis usually occurs in the forties and fifties and may be associated with stress, depression, sudden changes in lifestyle, career, or relationship (including extramarital affairs or divorce). The popular conception is that midlife crises usually happen to men; however, it appears that they occur just as often with women. In a study of Americans who described having experienced a midlife crisis, the crisis in some cases was associated with stressful life events (e.g., divorce, job loss; Wethington, 2000). Another common crisis during midlife is the *empty nest syndrome*, which describes feelings of emptiness and lack of purpose that may occur in parents after children grow up and move away from home. *Sandwich generation* is a term used to describe a phase in the family life cycle, when adults are simultaneously caring and providing for young children and aging parents. Individuals in the sandwich generation—sandwiched between responsibilities for children and aging parent—experience unique emotional and financial stressors (Lachman, 2004).

Longer life spans and social change have led to delayed parenting, changes in gender roles and expectations, and multiple careers or relationships. Stressful situations may prompt the onset of a DC. For example, infertility may lead to a DC for people whose life goals include childbearing. Likewise, premature menopause can cause stress because it signals both the end of childbearing potential and the onset of a period of life when a woman may redefine her conceptions of femininity, sexuality, roles, and relationships. In the 1970s the concept of the *biological clock* emerged as women became increasingly involved in the workforce and some women decided to postpone childbearing until they were older. The idea of the biological clock (which describes a woman's childbearing years) is characterized by the image of women in their thirties and forties anxiously trying to get pregnant before the onset of menopause. Concepts about the biological clock have changed somewhat with the advent of fertility treatments (e.g., in vitro fertilization; Friese, Becker, & Nachtigall, 2006).

As people age, they face changes in the form of retirement, physical decline, loss of relationships (when loved ones die), and death. Awareness of these impending changes may prompt individuals to redefine their self-image and reflect on their life experiences and achievements to find meaning in their lives (Sinnott, 2009).

See also human development, human life span, menopause, self-image.

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Sinnott, J. (2009). Complex thought and construction of the self in the face of aging and death. *Journal of Adult Development, 16*, 155–165.

Wethington, E. (2000). Expecting stress: Americans and the "midlife crisis." *Motivation and Emotion, 24*, 85–103.

Diagnostic and Statistical Manual of Mental Disorders

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) is a handbook, published by the American Psychiatric Association, utilized as the primary tool for diagnosing mental disorders in the United States. The *DSM-IV* (American Psychiatric Association, 2000) lists about 300 mental disorders organized into 17 broad categories, including mood disorders, anxiety disorders, schizophrenia and other psychotic disorders, sexual disorders, sleep disorders, personality disorders, and psychoactive substance use disorders (drug abuse). Each disorder is detailed in an entry that lists and describes symptoms that are required for diagnosing the disorder and other characteristics typical of the disorder. Each entry also [illegible]rs, if information [illegible]ilable,

general prevalence of the disorder, prevalence among various groups of people (females and males, people of diverse ethnic backgrounds, etc.), typical age of onset, predisposing factors, possible or probable courses, and other information.

The first *DSM* (*DSM-I*), published in 1952, listed 106 mental disorders and was 130 pages long. *DSM-II*, published in 1968, was very similar in content and format to *DSM-I* but longer, listing 182 disorders. *DSM-III* was published in 1980, listing 265 diagnostic categories, and was lengthier (494 pages). Producing *DSM-III* involved goals above and beyond those involved in producing the earlier editions of the *DSM.* One purpose was to improve the reliability of diagnosis; use of *DSM-I* and *DSM-II* entailed the clinician interpreting some diagnostic criteria. Symptoms and criteria for diagnosis listed in *DSM-III* were thus much more specific and stated in clear language. A second goal was to create language more consistent with the international system of classifying diseases called the *International Statistical Classification of Diseases and Related Health Problems* (*ICD*). *DSM-III-R* (*R* for "revised"), published in 1987, was similar to *DSM-III*, but some categories were added, some deleted, and some renamed, and some criteria were modified. *DSM-IV* was published in 1994, was 886 pages long, and described 297 disorders. A major difference from prior *DSM*s was that most diagnostic categories now included a criterion of clinical significance; for diagnosis, symptoms must cause "clinically significant distress or impairment in social, occupational, or other important areas of functioning" (p. 8). The *DSM-IV-TR* (*TR* for "text revision") was published in 2000, with relatively minor changes. The projected date of release for *DSM-V* is 2012.

Since the publication of *DSM-III* in 1980, diagnosis of mental disorders has involved a more comprehensive assessment of the individual than was done in the past. The individual is described on five axes; the first two axes are the actual diagnosis. Axis I lists the clinical disorder(s) from which the person suffers (i.e., bipolar disorder, panic disorder). All 17 categories of disorders, except personality disorders and mental retardation (now referred to as intellectual and developmental disabilities), are considered for Axis I. The personality disorders and mental retardation (intellectual and developmental disabilities) are considered for Axis II. These two types of conditions are separated from those on Axis I because they are long-standing, begin in childhood, and may interact with the Axis I disorder. On Axis III, medical conditions are listed. Knowledge of medical conditions can be helpful in understanding the client and in ruling out underlying medical causes of psychiatric systems (e.g., dementia related to Alzheimer's or anxiety related to an underlying heart condition); it may be necessary to consider medical conditions when making treatment decisions. For instance, an individual who suffers from major depressive disorder and AIDS may receive a somewhat different treatment recommendation than someone who suffers from major depressive disorder with no medical condition. Axis IV lists the stressors that the individual is currently experiencing, for example, homelessness, marital separation, job loss, or major financial difficulties. On Axis V the clinician provides an assessment of the overall (global) level of functioning of the client.

The primary use of the *DSM* is diagnosis of clients by psychiatrists, psychologists, or other mental health professionals for the purpose of making treatment recommendations for these clients. *DSM* diagnoses are also used to communicate information about the clients/patients to health insurance companies and to aid in policy-making decisions. Additionally, the *DSM* is utilized in research studies. For instance, when research is conducted on a particular mental disorder, prospective research participants

may be evaluated using the *DSM* to ensure that they all meet the diagnostic criteria for the particular condition being studied.

The current *DSM* system is not without controversy. For example, some psychiatrists, psychologists, and others question whether mental illness is best conceived in terms of diagnostic categories; the current system tends to suggest an either-or dichotomy—either an individual is mentally ill or not—whereas a more dimensional conception may be more helpful. Additionally, some argue that corporations such as the pharmaceutical industry have had too much influence in the creation of the *DSM.* Another criticism is that the professionals who create the *DSM* categories may be influenced by political pressure in determining whether a particular constellation of symptoms qualifies as a mental illness. For example, should having sexual fetishes be considered mental illness, and if so, under what circumstances? These and other controversies are discussed in Rachel Cooper's 2005 book *Classifying Madness: A Philosophical Examination of the Diagnostic and Statistical Manual of Mental Disorders.*

See also culture, culture-related specific syndromes, *Diagnostic Classification System of Mental Health and Developmental Disorders of Infancy and Early Childhood*, *International Classification of Diseases*.

Further Reading:

American Psychiatric Association, *DSM-V: The Future Manual*: http://www.psych.org/dsmv.aspx

References:

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Sample DSM five-axis summary. In this example, the clinician lists all the probable mental health disorders for the client at initial assessment. Incompatible diagnoses (e.g., cyclothymia vs. bipolar I disorder) will be ruled out as treatment progresses. The five-axis formulation may be used to develop a treatment plan and for billing or insurance purposes.

Axis I:	296.53	Bipolar I Disorder, most recent episode depressed, severe without psychotic features
	301.13	Cyclothymia (rule out)
	305.00	Alcohol Abuse Disorder
	293.83	Mood disorder due to diabetes (rule out)
Axis II:	V71.09	No Mental Disorder on Axis II
Axis III:		Diabetes
Axis IV:		Parents' relationship
		Has witnessed domestic violence
		Victim of domestic abuse
Axis V:		Global Assessment of Functioning: 22 (current)

Diagnostic Classification System of Mental Health and Developmental Disorders of Infancy and Early Childhood

The *Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood* (*DC:0–3*) was originally developed in 1994 to "address the need for a systematic, developmentally based approach to the classification of mental health and developmental disorders in the first four years of life" (Zero to Three, 2005). *DC:0–3* was developed by a multidisciplinary task force established in 1987 by Zero to Three: National Center for Infants, Toddlers, and Families. The task force includes professionals (clinicians and researchers) in the field of infant development and mental health from North America and Europe. The classification system was revised in 2005 (*DC:0–3R*).

DC:0–3R is intended to complement (not replace) existing classification systems such as the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000) and the *International Classification of Diseases* (*ICD*; World Health Organization, 1990). The goals of *DC:0–3R* include providing classification criteria to facilitate professional communication and clinical formulation. The developers of *DC:0–3R* recognize the need to consider adaptive and maladaptive patterns of development as well as to take individual differences into account in the assessment and treatment of infant and early childhood problems. *DC:0–3R* is designed to "help professionals recognize mental health and developmental challenges in infants and young children, understand how relationships and environmental factors contribute to mental health and developmental disorders, use diagnostic criteria effectively for classification and intervention, and work more effectively with parents and other professionals to develop effective treatment plans" (Zero to Three, 2005).

Like the *DSM-IV-TR*, *DC:0–3R* utilizes a multiaxial classification system with five axes:

- *Axis I: Clinical Disorders*. This axis provides classifications to describe the presenting problem or most prominent features of the infant or child's functioning. Classifications include Traumatic Stress Disorders (100), Disorders of Affect (200), Adjustment Disorders (300), Regulatory Disorders (400), Sleep Behavior Disorders (500), Eating Behavior Disorders (600), and Disorders of Relating and Communication (700).
- *Axis II: Relationship Classification.* Because infants develop in the context of their primary emotional relationships, Axis II strives to describe the quality of relational patterns (including behavior, affect, and psychological involvement) between the infant or child and her primary caregiver. Understanding the dynamics of these relationships is crucial to accurate clinical formulation and appropriate treatment planning.
- *Axis III: Medical and Developmental Disorders or Conditions.* Any relevant physical (including medical and neurological), mental health, and developmental diagnoses made using other diagnostic and classification systems are noted under Axis III.
- *Axis IV: Psychosocial Stressors.* This axis considers the impact of direct and indirect psychosocial stressors that may affect a child's sense of safety, security, or comfort. The impact of stress is summarized on a 9-point scale (stress index)

that takes into account the severity of the stressor, developmental level of the child, and availability and capacity of adults to serve as protective buffers.

- *Axis V: Functional Emotional Developmental Level.* This axis provides a 5-point scale that summarizes a child's overall functional emotional developmental level. The assessment is based primarily on direct observation of and interaction with the child but should also consider reports of the child's functioning at other times and in other settings (e.g., at home).

See also Diagnostic and Statistical Manual of Mental Disorders, *International Classification of Diseases*.

Further Reading:

Zero to Three Web site: http://www.zerotothree.org/

References:

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

World Health Organization. (1990). *International statistical classification of diseases and related health problems* (10th rev.). Geneva, Switzerland: Author.

Zero to Three. (2005). *Diagnostic classification of mental health and developmental disorders of infancy and early childhood* (rev. ed.). Washington, DC: Author.

Diffusion Tensor Imaging

Diffusion tensor imaging (DTI) is a type of magnetic resonance imaging (MRI) that produces images of living tissues, for example, the white matter of the brain. White matter is the brain tissue that connects different parts of the brain and carries nerve impulses between neurons, facilitating communication. DTI utilizes the known characteristics of water diffusion—how water moves through tissues—to interpret images. There are two types of diffusion imaging: diffusion *weighted* imaging (DWI) and diffusion *tensor* imaging (DTI). DWI is most appropriate in tissues in which water diffuses uniformly (Miller, 2006). DWI might be more sensitive to early brain changes after a vascular stroke than traditional MRI. DTI is useful with tissues that have an internal fibrous structure, for example, the neuronal axons (nerve fibers) of white matter (Miller, 2006). The fibrous structure causes water to diffuse more rapidly along the axis of the fibers and more slowly in a direction perpendicular to the fibers. The *rate* and *direction* of the diffusion form a vector (or *tensor*). Multiple images are taken from different directions and orientations, creating many vectors that yield a complete DTI image. Images of a brain region created from enough directions allow a three-dimensional DTI picture to be constructed (Miller, 2006). Because of the high information content, DTI images can be very sensitive to subtle problems in the brain.

DTI is useful for imaging lesions (abnormal or damaged tissue) in the white matter of the brain. It can help diagnose damage in traumatic brain injury, birth defects, developmental disorders, and stroke (Miller, 2006). DTI can help locate brain tumors and guide brain surgery. Tractography is the DTI process wherein directional information is used to follow the structure of neural tracts within the brain. Tractography is useful to identify age-related changes (deficits) in the white matter (Cabeza, 2004). This can help distinguish Alzheimer's disease from other types of dementia. In research, functional DTI (fDTI) is a dynamic way to look at neural

connectivity (neural networks) in action. Limitations of current DTI technology include raw images having low resolution and being prone to artifacts (introducing information that is not really there into images; Miller, 2006).

See also electroencephalography, functional magnetic resonance imaging, positron emission tomography, single photon emission computed tomography, traumatic brain injury.

Further Reading:

White matter atlas—Diffusion tensor imaging atlas of the brain's white matter tracts: http://www.dtiatlas.org/

References:

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Disgust

The word *disgust* means "bad taste," but people report that feelings of disgust extend far beyond bad-tasting foods or bacteria-filled body products such as feces and vomit. In studies in which people are asked to remember times when they were disgusted, they described a wide variety of disgust elicitors, including food, body products, animals, and gore, but also moral violations such as betrayal and racism (e.g., Haidt, Rozin, McCauley, & Imada, 1997). Viewing disgust broadly and including moral violations as examples of disgust occurs in many cultures. For instance, the word for "disgust" encompasses moral violations in many languages, including English, French, German, Russian, Hebrew, Japanese, Chinese, and Bengali (Haidt et al., 1997).

Disgust experts Paul Rozen, Jonathan Haidt, and Clark McCauley (2008) argue that disgust began as a rejection response that shields the body from the dangers presented by bad (e.g, poisonous, rotten, or contaminated) food and that as human societies developed, disgust also became a rejection response that guards the human soul from a variety of dangers. As Haidt and colleagues (1997) discuss, for North Americans, stimuli or situations that evoke disgust are food, body products, animals, sexual behaviors, contact with death or corpses, violations of the exterior envelope of the body (e.g., deformity and gory injury), poor hygiene, interpersonal contamination (contact with people who are viewed as offensive), and particular moral offenses. Many of the stimuli described can harm the body, and others have the potential to harm the soul.

Disgust has characteristic qualities that identify it as an emotion, including behavioral response, an expressive component, physiological aspects including brain activity, and an experiential component. Behaviorally, disgust involves distancing oneself from the disgusting object, situation, or event. Disgust experts often call this *rejection*. In the case of a food that tastes bad or that one has just learned was recently covered by cockroaches, the rejection takes the form of spitting out the food. In the case of learning that one's romantic partner was likely involved in child abuse, rejection may take the form of emotional distancing from the person and the breaking off of physical contact. The facial expression associated with disgust is fairly specific. Most experts agree that disgust includes [illegible], retraction of the upper lip,

and a wrinkling of the nose (e.g., Darwin, 1872/1998; Ekman & Friesen, 1975). Physiologically, with disgust, the parasympathetic nervous system is active, including lowering of heart rate (Levenson, Ekman, & Friesen, 1990). Areas of the brain that appear to be involved in disgust are the anterior insula, the basal ganglia, and parts of the prefrontal cortex (for a review, see Husted, Shapira, & Goodman, 2006). Additionally, people often report nausea with disgust. The experiential or feeling aspect of disgust is frequently described as repulsion.

Over eons of human history, the output aspect of disgust—behavioral withdrawal, facial expression, physiological response—has remained largely unchanged, but the input side has expanded (Rozin et al., 2008). Initially, people were disgusted by bad-tasting food, by body products such as feces, and by many things associated with animals; the function of the disgust reaction in this case was to protect the body from disease and infection. Rozin et al. (2008) argue that we now have the same disgust reaction to some situations that are unlikely to cause bodily harm. Situations such as feeling disgust toward a serial murderer, or even in reaction to his possessions, and feeling disgusted by racism or betrayal fit in this category. Rozin and colleagues argue that reacting with disgust is a way to protect either the soul (aspects of the self such as identity and self-concept), or the social order (the collective value system of a culture), or both.

Rozin et al. (2008) review research on a variety of topics that have been studied or discussed largely beginning in the 1990s, including the development of disgust in children, cultural differences in disgust, the relationship between disgust and psychopathology (e.g., disgust and obsessive-compulsive disorder), the relationship between disgust and pleasure, and other topics.

See also anger, contempt.

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Display Rules

The term *display rules*, coined by Ekman and Friesen (1975), refers to those rules that an individual has learned about managing the display of specific emotions in specific, usually public, contexts. For instance, [illegible] suggest that

the United States, men are generally taught to conceal feelings of fear in public, whereas women are taught to conceal anger in public. Display rules are also about the intensity of emotion that is expressed in public. For example, at the funeral of a man, we would expect the wife to cry more and appear more aggrieved than the man's female administrative assistant. It would be acceptable for the administrative assistant to show some grief, but if she carried on more than did the wife, this could raise suspicions about the nature of the relationship between the man and his administrative assistant.

Ekman and Friesen describe four reasons why people engage in this facial and bodily control that is dictated by display rules. The first reason is to conform to one's culture; these are cultural display rules. The preceding examples are cultural display rules, including gender-related rules. Some research has been conducted on cultural display rules. For example, Matsumoto (1990) compared display rules in Japanese and American cultures. He found some cultural differences, for instance, Japanese rated expressions of anger toward those in a subordinate position as more appropriate than did Americans. Matsumoto had predicted this finding because hierarchical relationships between people are intrinsic to Japanese culture, and anger expressions toward subordinates help to maintain the hierarchy, whereas Americans view people's relationships as more egalitarian. A second source of display rules is the idiosyncratic upbringing in one's family. These are called *personal display rules*. Families vary in the most fundamental level of display rules. For example, in some families, emotional expression is encouraged, whereas in other families, it is generally discouraged. A third reason for controlling one's emotional expressions is what Ekman and Friesen call *vocational requirement*. People learn to display their emotions appropriately for their particular occupational context. Failure to do so could be harmful to one's job security or ability to get along with one's work colleagues. Ekman and Friesen state that some professions (e.g., trial attorney, diplomat, salesperson, politician, doctor, nurse) may typically require more control of emotional expression than other professions. The fourth reason is *need of the moment*, meaning lying to protect oneself. A defendant guilty of murder pretends that he does not know the victim (whom he hated with a passion). A woman who has strong feelings for someone other than her spouse hides the ecstatic happiness she feels when she sees her male friend at a party that she and her husband are attending.

See also culture, Paul Ekman, facial expression, family, gender and emotions, nonverbal expression.

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Dissociation

Dissociation involves a "disruption in the usually integrated functions of consciousness, memory, identity, or perception" (American Psychiatric Association, 2000, p. 519). In usual experience, people feel senses of wholeness, continuity, and identity. In dissociation, psychological processes become isolated from one another. A foundation for integrated experience in memory and dissociation often (but not always)

Chris Sizemore, subject of the 1957 movie *The Three Faces of Eve* and advocate for the mentally ill, poses before speaking to a local chapter of the Mental Health Association in Oklahoma City, May 3, 1983. Sizemore, who developed 22 different personalities, recovered from multiple personality disorder (now known as dissociative identity disorder) in 1975. (AP/Wide World Photo)

includes memory loss (Steinberg, 1994). In healthy functioning, people recall past experiences and recognize friends, family, coworkers, and neighbors. Memory aids people in reacting to events and in planning for the future. When a major disruption in memory is present with no clear physical cause, an individual may be suffering from a dissociative disorder.

Several types of dissociative disorders have been identified by the American Psychiatric Association, the primary organization in the United States that categorizes and describes mental disorders. The disorders are dissociative amnesia, dissociative fugue, dissociative identity disorder, depersonalization disorder, and dissociative disorder not otherwise specified.

In dissociative amnesia, the sufferer is unable to remember important personal information, experiences, or both. When experiencing a dissociative fugue, an individual has amnesia for the past and travels to a new location. Frequently, he also takes on a new identity. In dissociative identity disorder (formerly known as multiple personality disorder), at least two or more identities (personalities) are present in a person, and each separate personality may or may not have awareness of the experiences, or even the existence, of the other personalities. Extensive memory loss must be present. *Sybil* and *The Three Faces of Eve* are famous cases of individuals with dissociative identity disorder. In depersonalization disorder, there is a feeling of detachment from one's body or mental processes without a loss of contact with reality (feeling that

the person knows that his body and mental processes are his but simply feels detached from them). A diagnosis of depersonalization disorder not otherwise specified is indicated when an individual has dissociative symptoms as primary features of the mental disorder but does not meet the diagnostic criteria for the other dissociative disorders.

Dissociation is a common symptom of the stress disorders: acute stress disorder and posttraumatic stress disorder. As Cameron (1963) described, dissociation is a defense that may be implemented when experiencing trauma. Dissociation is a way to hold off the acknowledgment of the traumatic experience until the individual is ready to accept it and integrate it into the self.

Dissociation does not necessarily imply pathology. Dissociation is an accepted occurrence during some religious activities and some cultural practices in some cultures. For instance, trance states and possession by a spirit or spirits may be viewed as dissociative states.

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Dissociative disorders, once thought to be rare and exotic, are probably underdiagnosed. A 2006 study found rates of dissociative disorders in psychiatric populations as high as 29 percent (Foote, Smolin, Kaplan, Legatt, & Lipschitz, 2006).

Dorothea Dix (1802–1887)

Dorothea Lynde Dix was an American activist on behalf of the mentally ill who established the first state mental hospitals in the United States. Dix was born in Hampden, Maine, and grew up in parts of Maine and Massachusetts until the age of 12, when she moved to Boston to live with her grandmother. Her father, Joseph Dix, came from a wealthy family, but Joseph chose not to follow a path that would ensure him wealth or even financial security. Soon after Dorothea was born, Joseph became a traveling Methodist minister. He was paid very little for his work, and the family did not have a stable home. Dorothea's mother, Mary Bigelow, a housewife, accepted and supported Joseph's decision to become a minister. Dorothea herself, who was an only child until she was 10 years old, experienced her parents, especially her father, as self-centered and d[illegible]hed, highly emo[illegible] and sometimes critical

and punitive. Furthermore, after Joseph's father was murdered when Dorothea was seven, Joseph began to drink heavily. Dorothea likely suffered physical abuse in the form of beatings, in addition to emotional abuse (Gollaher, 1995).

When Dorothea was 12, she ran away from home, moving to Boston to live with her grandmother, Joseph's mother, Dorothy. Dorothy cared for Dorothea but was a strong disciplinarian and lacking in warmth. Dorothea was unhappy there and a year later moved in with relatives, a household that included Dorothy's niece Sarah Fiske. In this household Dorothea experienced warmth, stability, and intellectual and social stimulation. In her later teenage years and her twenties, she experimented with traditional women's occupations, teaching, working as a governess, and writing, but none of these choices made her happy. In her mid-thirties, she suffered a breakdown and moved to England, hoping to find a remedy for her unhappiness. She met the Rathbones, social reformers and Quakers, and lived with them for a year. The Rathbones and others whom Dorothea met cared about an issue that soon sparked a passion in Dix: care of the mentally ill.

In 1840, Dix moved back to the United States with the goal of reforming the treatment of the mentally ill based on models that she had observed in England. In her home state, Massachusetts, she conducted an investigation of treatment of the poor mentally ill. She found that if a mentally ill person or her family had no funds for treatment, her care depended on donations from citizens. This led to widespread underfunding for treatment and abuses of the mentally ill, for instance, being held in small cages without regular food or hygiene, and sometimes beatings. For the next 40 years, from the 1840s through the 1880s, until she died, Dix worked to improve conditions for the mentally ill throughout the United States. Dix worked in a systematic fashion to raise consciousness and effect change. She proceeded state by state, starting with Massachusetts, collecting data about the mistreatment of the mentally ill, seeking support from the public and from politicians, and testifying before state legislatures; she did such testimony in at least 12 states (Lightner, 1999). Dix's testimony led to improvements in many facilities and the establishment of 40 public mental hospitals in the United States and Europe (Hothersall, 2004).

During the Civil War, Dix began her second career. She was appointed as superintendent of army nurses. Although she did her job responsibly as always, by all accounts, she was not as effective in this position as she was as a lobbyist and activist for the mentally ill. She was not hesitant to have open conflicts with doctors, and she did not have the passion for soldiers that she had for the mentally ill.

In 1881, Dix moved into a suite in the New Jersey State Hospital that the state legislature had designated for her, to live there until her death. Dix had never married or had children, but she maintained several lifelong friendships. By this point Dix was an invalid, and she died in the hospital in 1887.

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Dysphoria

Dysphoria comes from the Greek roots *dys* (ill or difficult) and *phoros* (to bear). It describes a state of depression, restlessness, anxiety, discontent, irritability, or feeling unwell or unhappy. It is considered the opposite of euphoria (feeling well or elated). The term was used by Hippocrates (460–337 BC) in *On the Sacred Disease* (Marneros, 2001). Dysphoria can be a temporary mood or a natural reaction to life stresses, frustrations, or losses (Thase & Lang, 2004). It can also be a symptom of a mood disorder (e.g., major depressive disorder, bipolar disorder, anxiety, or dysthymia). It has been associated with premenstrual syndrome, alexithymia, and schizophrenia (and other psychoses). While dysphoria is often associated with depressive states, it may also be associated with manic and hypomanic states in bipolar disorder (Marneros, 2001). Gender identity disorder includes *gender dysphoria*, a sense of unease or dissatisfaction when an individual's gender is in conflict with his or her physical sex. Dysphoria can be an effect of certain drugs (e.g., alcohol and other depressants) or drug withdrawal (e.g., stimulants, cocaine, MDMA, opiates). It can be a side effect of some medications (e.g., antipsychotics, some antidepressants, Ritalin, opiates). Dysphoria has also been linked to self-medication: an individual may use a drug (e.g., marijuana) in an attempt to alleviate dysphoric feelings (Castle & Murray, 2004). Dysphoria can be caused by physiological conditions such as hypoglycemia (low blood sugar).

See also alexithymia, anxiety, depressant drugs, depression, dysthymia, empathogen, euphoria, major depressive disorder, stimulant.

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Dysthymia

Dysthymia (dysthymic disorder) is a type of clinical depression that may have fewer or less severe symptoms than major depressive disorder but that lasts longer. For a diagnosis of dysthymia, one experiences a chronically depressed mood most of the day, more days than not, for at least two years. Additionally, the symptoms of dysthymia necessary for diagnosis include at least two of the following: poor appetite or overeating, insomnia or hypersomnia (sleeping too much), low energy or fatigue, low self-esteem, poor concentration or difficulty making decisions, and feelings of hopelessness. A diagnosis of dysthymia is not indicated if the depressed mood is determined to be caused by drug or alcohol abuse, medications, or a general medical condition (American Psychiatric Association, 2000). While symptoms of dysthymic disorder may be less severe than those of major depressive disorder, dysthymic disorder can be associated with significant impairment and distress.

About 6 percent of the American population suffers from dysthymia in their lifetime (Sadock & Sadock, 2003). Unlike major depressive disorder, individuals with dysthymic disorder are less likely to experience vegetative symptoms (sleep, appetite, weight change, or slowing down of movement). *Double depression* refers to symptoms of dysthymia and major depressive disorder occurring during the same time frame. People diagnosed with dysthymia have a greater likelihood of developing major depressive disorder. Women are two or three times more likely to be affected by dysthymic disorder than men (American Psychiatric Association, 2000). The chronic symptoms of dysthymic disorder can interfere with individuals' occupational and social functioning and with their quality of life.

Children diagnosed with dysthymia tend to be irritable rather than depressed. People usually experience symptoms of dysthymia for a long period of time before they decide to seek treatment. Because of the long duration and chronic nature of this disorder, it is possible that the sufferers and those around them come to believe that the symptoms are normal for them. This viewpoint further decreases the likelihood that the sufferer will seek treatment or remain in treatment once he has sought it.

Research suggests that people may inherit a predisposition to dysthymia. Individuals with dysthymic disorder are more likely to have first-degree relatives with major depressive disorder or dysthymic disorder than the general population (American Psychiatric Association, 2000). Common treatments for dysthymia include antidepressant medications and cognitive therapy, which involves changing the sufferer's negative thinking patterns. Antidepressant medications as treatment for dysthymia have been studied more than cognitive therapy and other forms of psychotherapy. A review of several studies that compared medication to short-term psychotherapy revealed that antidepressant medication was more effective in the short term than psychotherapy as a treatment for dysthymia. However, psychotherapy demonstrated more effectiveness on follow-up (Imel, Malterer, McKay, & Wampold, 2008).

See also antidepressant, cognitive therapy and cognitive-behavioral therapy, depression, major depressive disorder.

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Dysthymic disorder affects approximately 1.5 percent of the U.S. population age 18 and older in a given year. This translates to about 3.3 million American adults. The median age of onset of dysthymic disorder is 31.1 years.

Source: http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america.shtml

E

Ecstasy

Ecstasy is one of the variety of positive emotion or affective states that also include happiness, joy, contentment, pleasure, excitement, satisfaction, and others. According to Bagozzi (1999), the English language has about 40 words that describe states that are variants of happiness. Distinctions between some affective states are subtle, and some researchers have attempted to develop ways to categorize the states in an effort to aid in clarifying the differences. Russell's (1980) circumplex model is the product of such an effort. Russell identified two basic dimensions on which affective states differ: degree of arousal and degree of pleasure. In this model, ecstasy is characterized as very high in both pleasure and arousal. To contrast with other positive affective states, excitement is about as high in arousal as is ecstasy but is not as high as in pleasure. Happiness is not quite as high in pleasure and is significantly lower in arousal compared to ecstasy.

Some psychiatrists, philosophers, and others have attempted to understand ecstasy from a more personal, experiential perspective. Beer (2000) and Roth (2000) discuss the distinctions that the 19th- and 20th-century German psychiatrist Willy Mayer-Gross made between happiness and ecstasy. According to Mayer-Gross, a state of ecstasy involves a complete focus on one's own inner life and leaves little room for awareness of the external world. While happiness involves some degree of self-centeredness, the positive affect also moves outward, encompassing the world outside of an individual's mind. Another difference is that although ecstasy is an intensely felt emotion, there is calmness in it; the ecstatic individual feels no need to act, whereas happiness tends to propel one forward and encourage engagement with the world. Ecstasy is associated with a dissolution of the self, whereas happiness is not. The only unpleasantness in ecstasy is a possible fear—fear of loss of self.

As Beer (2000) writes, four broad causes of ecstasy have been described: religious, everyday, psychiatric, and drug induced. The distinguished 19th-century American psychologist William James (1902/1979) wrote extensively about religious ecstasy. In everyday ecstasy, the individual feels a loss of self and a connection to something larger, perhaps the universe. This may occur through numerous routes, including sexual experience, feeling of love (e.g., romantic, friendship, family), awe while experiencing

nature, and a revelation or epiphany. A number of psychiatrists (e.g., Anderson, 1938) have discussed ecstasy involved in some psychotic experiences that occur with schizophrenia, bipolar disorder (manic depression), or other disorders. Feelings of ecstasy are commonly reported in drug-induced states.

See also empathogen, happiness, William James.

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Edwards Personal Preference Schedule

The Edwards Personal Preference Schedule (EPPS, 1954) was developed by Allen Edwards to assess 15 needs (motives) that Harvard psychologist Henry Murray had outlined in his theory of needs (Edwards, 1959; Murray, 1938). The 15 needs are achievement, deference, order, exhibition, autonomy, affiliation, intraception, succorance, dominance, abasement, nurturance, change, endurance, heterosexuality, and aggression. The test consists of 225 pairs of statements referring to an individual's likes or feelings (which represent needs/motives), and the respondent is instructed to choose one from each pair.

The EPPS is used in clinical and counseling settings; it provides a measure of personality needs in a way that is nonjudgmental of and unthreatening to the client. The clinician or counselor can utilize results to open a discussion with the client. In their dialogue, the clinician will begin by identifying the needs salient for the client and will explain them. For instance, it may not be apparent to the client that a need for "intraception" means a need to analyze aspects of oneself and others, especially feeling and behavior aspects.

Critics have stated that the validity (the degree to which a test measures what it intends to measure) of the EPPS is low (e.g., Wohl & Palmer, 1970). However, Piedmont, McCrae, and Costa (1992) argue that validity of test scores improves if the format (but not the content) of the EPPS is modified; with a modified format, the EPPS is a useful test.

For the first four decades after its introduction, the EPPS was among the most frequently used of all tests by clinical and counseling psychologists. Additionally, in 1978, Buros stated that it was one of the 10 tests most frequently cited in research. Since then, the EPPS has dropped in popularity but remains among the top 30 or 40

tests most utilized by clinical or counseling psychologists, particularly in guidance centers, school settings, and assessment for employment.

See also Thematic Apperception Test.

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Egomania

Egomania is "a pathological love for, or preoccupation with, oneself" (Colman, 2009, p. 241). The term *egomania* is often used by laypersons in a pejorative fashion to describe an individual who is intolerably self-centered and with whom it is nearly impossible to get along or to reason. The clinical condition that most closely resembles the popular conception of egomania is narcissistic personality disorder.

The central characteristics of narcissistic personality disorder are generalized grandiosity, hypersensitivity to criticism, and lack of empathy that begins by young adulthood. An individual with this disorder has an exaggerated sense of self-importance. He believes that he is special and expects others to notice and praise him, even without necessarily having produced praiseworthy achievements. The sense of specialness means a feeling of uniqueness, and the narcissistic person believes that other people will not understand him; only other special people can relate to his experience. He can be extremely dismissive of people who are not viewed as special.

Underneath the apparent over-confidence and bravado lies a fragile personality. The narcissistic individual actually fears that he is unworthy or a fraud. His self-esteem may be highly dependent on being recognized as the best or perfect. For instance, he may believe that he is the best salesperson in his office, and if another individual wins the salesperson award, the narcissistic person will react with extreme humiliation. He has grandiose fantasies of boundless success or power or perfect love. He is jealous of those whom he perceives as being more successful in these areas that are valued. Because of the extreme insecurity, the narcissistic person often seeks attention and fishes for compliments.

Because of the grandiosity, lack of empathy, humiliation, and shame in the face of perceived criticism, and other characteristics, the narcissistic person typically has disordered relationships with others. He may have chosen his friendships and romantic partnerships because he viewed the selected people as useful in some way. A narcissist's relationship with others can be exploitative, self-absorbed, and cold.

Narcissistic personality disorder affects less than 1 percent of the population (American Psychiatric Association, 2000). The cause of the disorder is unknown; the two most accepted theories are contradictory. Some theorists (e.g., Wink, 1996) say that narcissism begins with cold, rejecting parents. The child then creates the self-absorption and grandiosity as a defense against feelings of worthlessness. Others (e.g.,

Sperry, 2003) argue that people who become adult narcissists were spoiled as children and were taught by their parents that they were superior and special. Thus far, treatment of narcissistic personality disorder is of limited success.

See also personality disorder, self-esteem.

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Paul Ekman (1934–)

Paul Ekman is one of the world's leading experts on emotion, specializing in the facial expression of emotion. He was born in 1934 in Washington, D.C., and grew up in New Jersey and Southern California. His father was a pediatrician and his mother an attorney. He has an older sister, Joyce Steingart, who is a clinical psychologist. Ekman went to college at the University of Chicago and New York University. He earned a PhD in clinical psychology at Adelphi University in 1958. He worked at the University of California, San Francisco, from 1960 to 2004, often as a research professor at the Langley Porter Neuropsychiatric Institute.

Ekman conducted groundbreaking research early in his career, during which time his work was funded by federal grants. Beginning in the 1960s and continuing through the 1970s and 1980s, he and colleagues studied facial expressions in humans across cultures. Their basic approach was to take photographs of people displaying facial expressions of various emotions—he chose anger, disgust, fear, happiness, sadness, and surprise. They then presented the photos to individuals in a wide variety of cultures, including some where the residents had never met people from the Western world. The researchers asked the participants to engage in a matching task: identify which face goes with which of the six emotions. (In many cultures, the research involved utilizing translators.) These studies indicate a high amount of similarity in interpreting facial expressions across cultures (see Ekman & Friesen, 1975). Ekman and collaborators thus argued that the facial expressions are biological in origin. The six mentioned earlier were the first six that Ekman identified as having these specific characteristics: present across cultures, with recognizable facial expressions, and biological in origin; he called these emotions *basic emotions*.

Ekman and Wallace Friesen's 1975 book *Unmasking the Face* describes in detail the movements of facial muscles that are associated with specific emotions. The book is also filled with photographs illustrating the descriptions. In the 1970s Ekman and Friesen also developed an assessment system, the Facial Action Coding System (FACS),

for categorizing and classifying facial expressions based on how muscular action in the face affects the appearance of the face. The system is used by psychologists and other behavioral scientists, computer scientists, animators, and others.

Ekman has received numerous awards and honors. He was named one of the world's top 100 psychologists of the 20th century by the American Psychological Association, was among *Time Magazine's* top 100 most influential people of 2009, and was awarded both the Distinguished Scientific Contribution Award by the American Psychological Association in 1991 and the William James Fellow Award by the American Psychological Society in 1998, among others. He has appeared on or been featured on numerous television shows, including Bill Moyers, the News Hour with Jim Lehrer, 48 Hours, Dateline, Good Morning America, Larry King, Oprah, Johnny Carson, and others. Articles describing or reporting on his work have appeared in the *New York Times, Washington Post, Time Magazine, Smithsonian, Psychology Today,* and other newspapers and magazines, both American and international.

Since his retirement from the University of California, San Francisco, in 2004, Ekman has been manager of the Paul Ekman Group, a small company that conducts research on emotional expression for security and law enforcement applications and that produces training devices to enhance emotional skills.

See also basic emotions, Charles Darwin, display rules, evolutionary psychology (human sociobiology), fabrication of emotion, Facial Action Coding System, facial expression, nonverbal expression, universal signals.

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Electroconvulsive Therapy

Electroconvulsive therapy (ECT) is a psychiatric treatment that involves passing electrical current through the brain to induce an epileptic seizure. It is currently used to treat severe, refractory (treatment resistant) depression. ECT has also been used to treat schizophrenia and bipolar disorder.

Before the development of ECT in the 1930s, treatment for severe mental illness consisted of restraint, seclusion, hydrotherapy (hot and cold water therapy), sedation (with morphine, bromides, barbiturates, and chloral hydrate), surgical sterilization (hysterectomy or vasectomy), institutionalization, and other types of shock therapy. In 1917, Austrian physician Julius Wagner-Jauregg used malaria to induce fevers (pyrotherapy) to treat paralytic dementia caused by syphilis (Fink, 1999). In 1927, Austrian neurophysiologist and psychiatrist Manfred Sakel used insulin to induce comas and convulsions to treat patients with schizophrenia or drug addiction. Ladislas J. Meduna, a Hungarian neurologist and neuropathologist, studied glial cells (neuroglia, or glia). *Glia* are brain cells that maintain brain balance (homeostasis) and are

part of brain signal transmission. During autopsies, Meduna found that the brains of patients with epilepsy had a higher than normal concentration of glia, while brains of patients with schizophrenia had lower than normal concentrations. Meduna thought that inducing epileptic seizures in patients with schizophrenia might increase brain glia concentrations and relieve psychosis. Observations seemed to bear this out: relatively few institutionalized schizophrenic patients had epilepsy, and those who developed seizures (after infection or head trauma) seemed to be relieved of their psychosis (Fink, 1999). Meduna induced seizures using camphor oil and later using Metrazol (a heart medication). Ugo Cerletti, an Italian neurophysiologist, felt that Metrazol-induced seizures were useful in the treatment of schizophrenia but were too dangerous and difficult to control. Cerletti had observed pigs being anesthetized with electroshock (inducing seizures) before being butchered. In 1938, Cerletti and Italian psychiatrist Lucio Bini developed a method using a brief electrical shock to induce seizures in humans (Fink, 1999).

Shock treatment became increasingly popular throughout the 1940s and early 1950s. Especially before the development of antidepressants and antipsychotics in the 1950s, ECT was hailed as a modern and humane alternative to existing treatments for mental illness. In the 1950s, ECT methods were improved through the use of anesthesia and muscle relaxants. This reduced the incidence of some of the side effects associated with earlier ECT methods such as tooth damage, broken bones, and joint dislocation. Other side effects of ECT include risks associated with general anesthesia, uncontrollable seizures, peripheral nerve palsy, skin burns, short-term confusion following treatment, and retrograde or anterograde amnesia (loss of memory of events before or after the ECT treatment). Mental health practitioners, researchers, and patients disagree about the nature and extent of memory loss associated with ECT. ECT may be administered with electrodes placed on each temple (bilateral) or only on one temple (unilateral). While bilateral treatment seems to be more effective than unilateral, it is also associated with more severe side effects, including more persistent memory loss. Likewise, ECT utilizing higher energy (greater voltage) seems to be more effective but also causes more impairment than low-energy ECT (Ebmeier, Donaghey, & Steele, 2006).

ECT seems to be most effective for depression, especially with psychotic symptoms (delusions and hallucinations). A course of ECT usually consists of a series of treatments given several times a week over a period of weeks or months. The effects of ECT are short-lived, so patients are likely to require pharmacologic (medication) follow-up treatment (Ebmeier et al., 2006).

There is a great deal of controversy about ECT. Issues include whether it is an effective treatment; disagreement about the nature, severity, and duration of side effects; patient satisfaction and perceptions about ECT; and issues of informed consent. Opinions seem to be polarized, with some people strongly extolling the benefits and effectiveness of ECT and others decrying side effects and a history of dangerous, abusive practices. Patient reports about ECT differ from those of clinicians and researchers: mental health practitioners tend to report greater effectiveness and fewer side effects than do patients. In a review of articles about patient views about ECT benefits and risks, at least one-third of patients reported persistent (long-term) memory loss (Rose, Fleischmann, Wykes, Leese, & Bindman, 2003). Reports of patient satisfaction with ECT vary; some estimates of patient satisfaction range from 70 to 80 percent (Barnes,

2009). Issues of informed consent arise in situations when ECT is administered to the elderly, developmentally disabled individuals, or others who cannot truly understand the potential risks and benefits of ECT, either by virtue of lack of competence or because they are incarcerated.

Portrayals of ECT in the popular press have reflected attitudes, and helped to shape practices, surrounding ECT (Hirshbein & Sarvananda, 2008). The electric chair, introduced in the United States in the 1880s as a method of capital punishment, had been viewed as a sign of advancing civilization. In a 1940 article in *Science News Letter* (Van de Water, 1940), ECT was hailed as a means to cure previously incurable diseases: "this new use of electricity for mental health instead of for death is being enthusiastically welcomed by the medical profession" (Hirshbein & Sarvananda, 2008, p. 3). Portrayal of ECT in the 1975 film *One Flew over the Cuckoo's Nest* contributed to the perception of ECT as a tool of suppression and control or as a means to punish or manage unruly patients. This portrayal reflected a social climate in which questions were raised about patient rights, abuse, and psychiatry as a means of social control. In 1982, ECT was banned in Berkeley, California, by a voter-approved ballot initiative measure (which was later overturned).

Established therapies for severe depression include antidepressant medication and psychotherapy. Sometimes ECT is given in combination with other treatments (medication and/or psychotherapy). Other treatments being studied for severe depression include transcranial magnetic stimulation and vagus nerve stimulation.

See also antidepressant, depression, major depressive disorder, psychodynamic psychotherapy and psychoanalysis.

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Electroencephalography

Electroencephalography (EEG) is a measure of brain activity. The procedure involves attaching electrodes to an individual's scalp. The electrodes measure electrical activity of brain cells close to the scalp and provide millisecond-by-millisecond readings. An EEG can be used by presenting a visual, auditory, olfactory, or other stimulus to an individual and recording the EEG changes that occur after the stimulus was

A man is hooked up to an EEG machine as part of a research study. An EEG can be used by presenting a visual, auditory, olfactory, or other stimulus to an individual and recording the EEG changes that occur after the stimulus was presented. (iStockPhoto)

presented. The readings produce specific information about time of experience but not always about specific location of the brain activity, although general location is indicated. Compared to most measures of brain activity, EEGs are inexpensive to use.

An EEG can be helpful in providing information about emotion; however, brain activity is recorded only in areas close to the scalp, whereas many brain areas relevant to emotion are located in the interior. Despite the shortcomings associated with using EEGs, some important information about emotion has been discovered or confirmed through their use. For instance, a volume of EEG evidence shows that the right hemisphere of the brain tends to be associated with negative affect (immediate, physiological response and evaluation of a stimulus as good or bad) and the left with positive affect (e.g., Davidson, 2003). As another example, using both EEG and functional magnetic resonance imaging (fMRI), Seitz et al. (2008) found that the subjective experience of empathy, as a response to observing another person's facial expression of empathy, involves the activity of the dorsal medial frontal cortex of the brain.

See also biofeedback, functional magnetic resonance imaging.

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Albert Ellis (1913–2007)

Albert Ellis, the American psychologist who is most famous for developing rational emotive behavior therapy, grew up in New York City, child to a traveling businessman and a homemaker. Ellis described both parents as emotionally cool and distant. Although his mother was home more than his father, she was often inattentive toward the children, spending a great deal of time sleeping or outside of the house. Ellis, who was the oldest, adopted a parental role with his younger brother and sister, waking them in the mornings and dressing them. Ellis had poor health as a child; he was hospitalized eight times between the ages of five and seven, with conditions that included kidney disease, a severe bacterial infection, and tonsillitis. Ellis's parents divorced when he was 12.

Ellis earned a BA in business from the City University of New York. His ventures in business were not successful, and he began to research and write about human sexuality. While working on this topic, his friends sometimes asked him for advice, and Ellis discovered that he enjoyed dispensing it. This led to an interest in clinical psychology. He entered Teachers College of Columbia University in 1942 and earned a PhD in clinical psychology in 1947. During his graduate education, Ellis had come to believe that psychoanalysis was the best form of psychotherapy and sought to enter psychoanalytic training. Psychoanalytic institutes would not accept students who did not possess medical degrees, but an individual analyst agreed to train him.

In Ellis's work with his patients, he found that those who saw him once a week were recovering as quickly as those who saw him nearly every day (psychoanalytic therapy requires daily treatment). This observation and other factors led him to become somewhat disenchanted with psychoanalysis, and he strove to develop a form of therapy that would work more quickly and efficiently. In 1955, rational therapy began. The focus was to show people that they create their own emotional pain by holding beliefs that are "irrational"—rigid, perfectionist, and self-defeating. Through rational therapy, an individual can learn to retrain her belief system. Rational therapy was the beginning of a new paradigm in psychotherapy: *cognitive therapy*. The paradigm shift began slowly, however. Ellis's first widely public presentation of rational therapy was at the American Psychological Association convention in Chicago in 1960. Although his talk was met with some interest, he also received a measure of scorn and even hostility from many psychologists and psychiatrists. The *cognitive revolution* in psychology began in full force some years later.

Ellis founded a psychotherapy training institute in 1959, the Institute for Rational Living (now the Albert Ellis Institute). Its primary focus was to hold workshops that would train other psychotherapists in rational emotive behavior therapy (formerly rational therapy). Ellis worked at the institute, training, conducting psychotherapy with clients, and writing, until his death. Ellis authored more than 75 books. He was awarded numerous honors, including the New York State Psychological Association's Lifetime Distinguished Service Award and the Humanist of the Year award from the American Humanist Association in 1971. In a 1982 survey of American and Canadian psychologists, he was voted second most influential psychotherapist in history (Carl Rogers was first and Sigmund Freud was third).

In 2004 and at age 90, Ellis married Debbie Joffe [illegible] his third wife. Joffe, a psychotherapist and proponent of Ellis's therapy, supported and cared for him during the last

years of his life. Ellis died on July 24, 2007, after an extended illness. He is survived by his wife and several nephews.

See also ABC model of emotional reaction, cognitive therapy and cognitive-behavioral therapy, rational emotive behavior therapy.

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Albert-Ellis-Friends.net Web site: http://www.albert-ellis-friends.net (*Note:* Reputedly, at the time of his death, Ellis no longer endorsed the Albert Ellis Institute. This Web site was created by friends of Ellis and explains some of Ellis's conflicts with the Institute.)

Albert Ellis Institute Web site: http://www.albertellisinstitute.org/.

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Embarrassment

In their textbook on emotion, psychologists James Kalat and Michelle Shiota (2007) define embarrassment as "the emotion felt when one violates a social convention, thereby drawing unexpected social attention and motivating submissive, friendly behavior that should appease other people" (p. 239). This definition consists of three components that require elaboration. First, "social convention violation" is conceived broadly and may include making an innocent mistake (such as beginning to introduce someone to another person and forgetting the name(s) of one or both people), being in an unusual or uncommon situation (such as being on the receiving end of glowing praise in a public situation), or, less frequently, doing something that induces a low to moderate amount of shame (such as failing at a task that is slightly or moderately important to one). Second, this violation draws unexpected social attention. Thus, in embarrassment, one is the center of attention, even if briefly, and the attention was a surprise. Third, the person is motivated to act in a submissive, friendly fashion, which may appease.

A large part of the submissive action is the particular facial and bodily expression characteristic of embarrassment. When embarrassed, an individual hides her face and avoids eye contact, possibly turning her head down. She may smile a tense, "bashful" smile. Blushing often occurs. According to some researchers, such as Keltner and Buswell (1997), this facial/bodily reaction, especially in combination with other behaviors, serves to appease others. Sometimes embarrassment occurs because the individual did something that caused some harm or inconvenience to another person. For example, one of the authors (G.R.), while in high school and working as a waitperson, once accidentally poured iced tea into the lap of a customer. G.R. blushed dramatically, apologized profusely, and during part of the experience, covered her face with her hands. Had she simply walked away without appearing embarrassed, even if she apologized, the customer would have likely felt more slighted than he did. Keltner and Buswell argue that the expression of embarrassment has a social function; it signals submissiveness, a concern about the person who was harmed, and that the offense was accidental. The expression may have evolved through natural selection to defuse potentially anger-inducing situations.

Embarrassment is one of several emotions, including shame, guilt, and pride, that are called *self-conscious emotions.* These emotions are generally more cognitively complex than fear, anger, happiness, [illegible] others. Feeling one of the self-conscious emotions involves evaluating or [illegible]ing oneself or one's behavior. This means that to experience these emotions, [illegible] possess [illegible] self

concept). According to many psychologists, the self-concept is not inborn; rather, it develops over time. The development of the self-concept begins with recognizing the boundaries of the physical self. For instance, when nursing, the infant does not initially know the difference between self and the mother's breast. With life experience, including more and more nursing experiences, the infant begins to notice the distinction between the physical self and the physical nonself (the "other," in this case, the mother's breast). Psychological and other attributes (e.g., I am smart, I am friendly, I am lazy, I am a good poker player) gradually become aspects of the individual's self-concept. When a person is embarrassed, he feels that he has done something, or something has happened to him, that is worthy of self-consciousness.

The investigation of embarrassment and the other self-conscious emotions has been relatively neglected. As the study of emotion has gained in popularity and sophistication, interest in the self-conscious emotions has increased. Most researchers note the existence of overlaps between the self-conscious emotions (in subjective experience, in expression, etc.), for example, between embarrassment and shame. A significant portion of future research on embarrassment, shame, guilt, and pride will focus on clarifying the distinctions between them.

See also guilt, pride, self-image, shame.

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- People are often embarrassed when they commit a faux pas (social blunder). In French, *faux pas* literally means "false step."
- Those who care more about what others think of them are more prone to embarrassment.
- People who are easily embarrassed are not necessarily shy or lacking in social skills.
- Signs of embarrassment may include blushing, displaying an embarrassed smile, turning away from observers, covering the mouth, or nervous laughter.

Emo

Emo (short for emotional), describes a style of [illegible] particularly emotional (with sad lyrics); a young person who is conside[illegible]overly emotional or sensitive; or people associated with emo stereotypes and fa[illegible]. E[illegible] described a

an "adolescent angst subculture." The emo subculture and musical genre emphasize being open about emotions (often sad ones). Emo has been associated with depression, unhealthy introspection, and the glorification of self-harming behaviors (e.g., cutting, self-mutilation). Emo fashion generally consists of black clothes, tight pants, and bangs combed over the eyes. The term *emo* is often used pejoratively. People who are emo may be perceived of as whiney or melodramatic and may be teased or ridiculed (Kirsch, 2006).

In the United States, the stereotypical emo is young (adolescent), white, middle class, and suburban. However, in Mexico City, middle-class emo youth are having violent clashes with members of other subcultures, including "darks" (known as goths in the United States), *raperos* (rap music fans), and *punketos* (punk rockers). The emo movement has spread internationally through the Internet. Emo came to Mexico from the United States and Europe around 2003 (Hawley, 2008).

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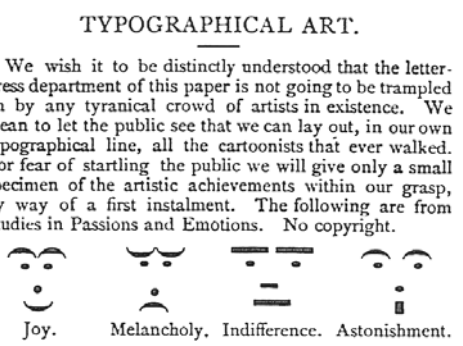
Emoticons

An emoticon is a textual portrayal of a facial expression intended to indicate the writer's mood or convey an emotion. The word *emoticon* is a combination of the English words *emotion* and *icon.* Emoticons are sometimes referred to as smileys or smiley marks. Well-known modern emoticons include the happy face, made by combining a colon and closing parentheses [:)], and the sad face, made by combining a colon with an opening parentheses [:( ]. Emoticons are used as facial expressions in text and are considered by some to be a type of nonverbal communication. They can be used to strengthen the intensity of a verbal message, create ambiguity, express humor or sarcasm, and communicate moods, opinions, and attitudes (Derks, Bos, & von Grumbkow, 2008).

Emoticons use can be traced back to humorous writing of the 19th century. Emoticons (described as "typographical art") were published in *Puck* magazine in 1881. The Puck emoticons, using typeset punctuation marks, were described as representing joy, melancholy, indifference, and astonishment.

Modern emoticon use started as punctuation marks that—when viewed sideways—represent facial expressions. In 1982, Scott E. Fahlman posted a message on the Carnegie Mellon University's computer bulletin board system proposing the use of character sequences for joke markers (Krohn, 2004). Fahlman's face markers included hyphens: jokes were indicated by [:-)] and comments that were not jokes were indicated by [:-( ]. After this introduction, emoticons spread throughout ARPANET


TYPOGRAPHICAL ART.

We wish it to be distinctly understood that the letter-press department of this paper is not going to be trampled on by any tyranical crowd of artists in existence. We mean to let the public see that we can lay out, in our own typographical line, all the cartoonists that ever walked. For fear of startling the public we will give only a small specimen of the artistic achievements within our grasp, by way of a first instalment. The following are from Studies in Passions and Emotions. No copyright.

Joy. Melancholy. Indifference. Astonishment.

Emoticons printed in 1881 in the U.S. magazine *Puck.* (ABC-CLIO)

(the early Internet). Since then, emoticons have been used in instant text messages, computer games, e-mails, and on the Internet. Some computer word processors or text editors automatically replace specific character sequences with emoticons.

While emoticons started as simple sequences of characters representing happy and sad faces, there are now many complex variations. Typical emoticons using combinations of characters available on standard English computer keyboards include devilish [:->], "hmmm" [:/], surprised [:-o], just hit it big [$-)], stayed up too late [#-)], bored [:-I], crying [;-( ], tongue-tied [:-&], talking [:-V], confused [%-( ], dazed or silly [%-)], and wry smile [}-)]. In addition to smiley faces, acronyms and abbreviations are also used to convey emotion (Krohn, 2004), for example, LOL (laughing out loud), gr8 (great), and XOXO (hugs and kisses).

Some modern emoticons available on the Internet are colored, animated graphics representing different emotions. There are different styles of emoticons for Western (e.g., American) computer users and several East Asian styles (Japanese, Korean, Chinese, and Taiwanese).

See also facial expression, nonverbal expression.

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Emotion Regulation. *See* Regulation of Emotion.

Emotional Abuse

In 1962, C. Henry Kempe and colleagues organized a symposium on child abuse that was presented at the annual convention of the American Academy of Pediatrics. Their efforts did much to further the cause of prevention of child abuse. They coined the term *battered child syndrome.* The papers they wrote had an influence on the legislature, leading to laws which require that child abuse be reported in all 50 states (O'Hagan, 1999). The early reporting focused on physical abuse, but within a few decades scholars developed a better understanding of emotional abuse, and now assessments of individual cases of child abuse must also include a thorough evaluation of emotional abuse.

According to O'Hagan (1999), the central characteristic of emotional abuse of a child is that the child's emotions and emotional expressions are met with inappropriate emotional responses by the caregiver; inappropriate are generally meant to suppression

of negative emotions or indifference as a response. It is inappropriate to respond to a curious or joyful child with annoyance, anger, or violence. It is inappropriate to respond to fear with ridicule. If a child expresses pride or excitement, happiness and encouragement would be appropriate responses, but not indifference or resentment. As O'Hagan points out, every parent can occasionally respond inappropriately. Emotional abuse is occurring if the inappropriateness is repetitive and occurs over a long period of time.

Emotional abuse of a child affects the child's emotional development. Healthy development involves the experiencing and expressing of a wide variety of emotions, both positive and negative (emotions that feel bad but that may or may not be harmful to the child). With emotional abuse, the experiencing and expression of positive emotions becomes restricted. Additionally, negative emotions are experienced (although not necessarily expressed) more prevalently (O'Hagan, 1999). Inadequate development of emotional experience and expression that occurs with emotional abuse interferes with the child's ability to have healthy social relationships (Harris, 1989). Further consequences associated with emotional abuse include limited ability to learn about the appropriateness of specific emotions and how to regulate one's emotions; understanding of emotion, including empathizing with others; and understanding emotion as portrayed in art, literature, music, and the other arts (O'Hagan, 1999).

Emotional abuse of children occurs more frequently among particular parent groups, especially those who (1) experienced emotional abuse when they were children, (2) are in violent marital (or unmarried) relationships that the children observe, (3) are mentally ill, and (4) are poor, isolated, unsupported, and single (O'Hagan, 1999). Treatment involves educating parents about the nature of emotional abuse. An additional technique is videotaping interactions between parents and child in the home, day care center, or other location and playing the tape for the parents. Parents are asked to carefully observe these interactions and to evaluate them and think about more healthy ways to respond to the child. Crosson-Tower (2009) discusses additional treatments.

Another common form of emotional abuse occurs in intimate relationships. Abuse of women has been widely studied. Although scholars have not produced a consensual definition of emotional abuse of women, most agree on five major characteristics: (1) degradation and humiliation; (2) attempts to control physically and/or emotionally, through threats; (3) rejection and/or neglect; (4) social isolation; and (5) exploitation (Arias, 1999). Emotional abuse of women can result in numerous negative consequences, including diminishing self-esteem, problems in other relationships, decreased work performance, abusive drinking, anxiety, depression, and increased risk for posttraumatic stress disorder (Arias, 1999). Victims of emotional abuse are typically treated for a correlated problem, such as depression or posttraumatic stress disorder, rather than receiving treatment for the emotional abuse itself (Arias, 1999). Such treatments may include cognitive-behavioral therapy, which focuses on changing people's ways of thinking and on engaging directly in behavioral exercises to change the maladaptive behaviors.

See also posttraumatic stress disorder, relationships.

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Emotional Expression. *See* Facial Expression, Nonverbal Expression, Vocal Expression.

Emotional Intelligence

Emotional intelligence (EI) was proposed as a set of interrelated abilities by American psychologists John D. Mayer and Peter Salovey in 1990. Emotionally intelligent people were thought to have the ability to reason about and use emotions to enhance thought more effectively than people with less EI. EI involves sophisticated information processing about one's own and others' emotions and the ability to use that information to guide thinking and behavior. Individuals high in EI are able to use their skills to pay attention to, use, and manage emotions in ways that can benefit themselves and others. Mayer and Salovey's EI is based on four hierarchical branches or sets of skills: (1) managing emotions to achieve specific goals; (2) understanding emotions, emotional language, and signals conveyed by emotions; (3) using emotions to facilitate thinking; and (4) perceiving emotions accurately in oneself and others (Mayer, Salovey, & Caruso, 2008).

In 1920, American psychologist Edward Thorndike published work about social intelligence. In 1935, Edgar A. Doll published an instrument to measure socially competent behavior in children (the Vineland Social Maturity Scale). As work continued to define and measure social intelligence, researchers began looking into *alexithymia*—an inability to recognize, understand, and describe emotions. Alexithymia has been associated with schizophrenia, brain injury, Parkinson's disease, posttraumatic stress disorder, depression, and substance abuse. This ability (lacking in alexithymia) was considered essential to social and emotional intelligence. American psychologist Howard Gardner's 1983 theory of eight multiple intelligences includes *intrapersonal* (emotional) and *interpersonal* (social) intelligence. American developmental psychologist Carolyn Saarni's (1990) concept of emotional competence includes eight interrelated social and emotional skills. In 1997, psychologist Reuven Bar-On proposed a mixed model of emotional-social intelligence (ESI). Bar-On's ESI model includes some emotion-related qualities (e.g., emotional self-awareness, empathy) and additional qualities such as reality testing, assertiveness, self-regard, and self-actualization (Bar-On, 2006).

In 1995, American psychologist Daniel Golem[illegible]ublished the best[illegible]g book *Emotional Intelligence.* Goleman built on Mayer a[illegible]ove[illegible]epts, adding

many other traits to his concept of EI: persistence, zeal, self-control, overall character, trustworthiness, adaptability, innovation, communication, team capabilities, and other positive attributes. Goleman made many extraordinary claims such as that EI could be more powerful than IQ (intelligence quotient), that "EI accounts for over 85% of outstanding performance in top leaders" (Watkin, 2000, p. 89), and "when [comparing] star performers with average ones in senior leadership positions, nearly 90% of the difference in their profiles was attributable to emotional intelligence factors rather than cognitive abilities" (Goleman, 1998, p. 94). Goleman's book received a great deal of publicity and eventually formed the popular concept of EI. EI has grown into an industry of testing, education, publication, and consulting. While originally EI was considered to be a set of interrelated abilities, it has since been described as an eclectic mix of traits or dispositions including happiness, self-esteem, self-management, and optimism. These alternative approaches have led to confusion about the meaning and applications of EI. The concept of emotional intelligence—criticized because it refers to so many different traits and concepts—is not considered by some to be a legitimate empirically based (scientific) construct.

EI has been embraced for several reasons. It is believed that EI training can improve functioning within various social contexts (e.g., relationships, employment, education). Claims that EI is more important to success and satisfaction than cognitive abilities (IQ) seem attractive, especially given the antagonism about IQ tests, which have (at times) been misinterpreted and misused. IQ is seen as relatively stable over a person's lifetime. Goleman plays into stereotypes about people with high IQs, portraying them as socially inept nerds with no social skills. Thus EI becomes desirable as a skill that can be trained and that promises success and satisfaction (Matthews, Zeidner, & Roberts, 2003).

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2003) is used to measure the four branches of EI. Bar-On coined the term *emotional quotient* (EQ) in 1997 to describe his approach to assessing emotional and social functioning. Bar-On developed the Emotional Quotient Inventory (EQ-i) in 1997, a self-report instrument to measure ESI (Bar-On, 2006). Other instruments used to measure EI have been developed, including the Situational Test of Emotional Understanding (STEU) and the Situational Test of Emotion Management (STEM; MacCann & Roberts, 2008). There are many popular EI tests available in bookstores and on the Internet. However, popular EI tests may lack validity or reliability.

See also alexithymia, emotion regulation, emotional quotient.

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Emotional Quotient

Reuven Bar-On coined the term *emotional quotient* (EQ) in 1997 to describe his approach to assessing emotional and social functioning, which he referred to as emotional-social intelligence (ESI). Other researchers have used EQ to measure emotional intelligence (EI). While the theories (EI or ESI) purport to measure similar types of skills, they are based on different approaches and measure different concepts.

In 1990, American psychologists John D. Mayer and Peter Salovey proposed EI as a set of interrelated abilities, based on four hierarchical sets of skills: (1) managing emotions to achieve specific goals; (2) understanding emotions, emotional language, and signals conveyed by emotions; (3) using emotions to facilitate thinking; and (4) perceiving emotions accurately in oneself and others (Mayer, Salovey, & Caruso, 2008). The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2003) is used to measure the four branches of EI. Other empirically based instruments used to measure EI include the Situational Test of Emotional Understanding (STEU) and the Situational Test of Emotion Management (STEM; MacCann & Roberts, 2008).

Bar-On developed the Emotional Quotient Inventory (EQ-i) in 1997, a self-report instrument to measure ESI. Bar-On's ESI model includes some emotion-related qualities (e.g., emotional self-awareness, empathy) and additional qualities such as reality testing, assertiveness, self-regard, and self-actualization (Bar-On, 2006). The short form of the EQ-i (EQ-i:S, 2002) has been criticized as being easy to fake—in other words, it is easy for someone to drive up her own EQ score (Grubb & McDaniel, 2007).

In 1995, American psychologist Daniel Goleman published the best-selling book *Emotional Intelligence.* Goleman built on Mayer and Salovey's early concepts, adding many other traits to his concept of EI: persistence, zeal, self-control, overall character, trustworthiness, adaptability, innovation, communication, team capabilities, and other positive attributes. Goleman's book—which received a great deal of publicity—led to the growth of EI into an industry of testing, education, publication, and consulting.

There are many popular EQ tests available in bookstores and on the Internet. However, popular EQ tests may lack validity or reliability.

See also emotional intelligence.

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Emotions Anonymous

Emotions Anonymous (EA) is a 12-step fellowship modeled after Alcoholics Anonymous (AA). EA was founded in St. Paul, Minnesota, in 1971. There are over 1,000 EA chapters in 35 countries, including the United States. EA is supported through voluntary member contributions.

EA members are people of diverse ages, from all walks of life, who come together at meetings to help each other recover from emotional difficulties. Emotional issues members are recovering from include depression, anger, problematic relationships, grief, anxiety, low self-esteem, panic, abnormal fears, resentment, jealousy, guilt, despair, fatigue, tension, boredom, loneliness, withdrawal, obsessive and negative thinking, worry, and compulsive behavior. EA meetings are not led by professionals and do not provide counseling. Meetings are structured to help people who want to maintain emotional health in their daily lives through the use of EA's 12 Steps.

In addition to the 12 Steps of EA, which are modeled after AA's 12 Steps, EA utilizes 12 "Helpful Concepts of the EA Program," which include basic tools of the program (e.g., EA literature and weekly meetings) and the principles of anonymity, being nonjudgmental, and not giving advice. The concepts emphasize that while the steps suggest belief in a higher power, EA is a spiritual, not a religious, program. EA is not a place to discuss religion, politics, or any other outside issues. The concepts state that EA is a path toward being able to live at peace with unsolved problems, that it is important to utilize (not analyze) the EA program, and that it is not helpful to label emotional difficulties. The concepts stress the importance of confidentiality at meetings and reiterate that everyone is entitled to express his opinions at EA meetings. Other 12-step programs designed to help people with emotional difficulties include Anorexics and Bulimics Anonymous, Clutterers Anonymous, Depressed Anonymous, Dual Diagnosis Anonymous, Dual Recovery Anonymous, and Obsessive Compulsive Anonymous.

See also Alcoholics Anonymous, 12-step programs.

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Empathogen

An *empathogen* (a term that means producing empathy) is a psychoactive drug that induces social and emotional effects such as empathy and a desire for social bonding. The best-known empathogen is MDMA (3,4-methylenedioxymethamphetamine), also known by street names Ecstasy, XTC, E, X, and Adam. MDMA is chemically

similar to methamphetamine (a stimulant) and mescaline (a hallucinogen). It has energizing effects; can produce euphoria and distortions in time and perceptions; increase enjoyment of tactile experiences; decrease fear and anxiety; and create a sense of intimacy with others. MDMA was developed in Germany in the early 1900s as a compound to synthesize other pharmaceuticals. Although it had never undergone formal clinical testing, in the 1970s, some psychiatrists began using MDMA as a psychotherapeutic tool (National Institute on Drug Abuse, 2006). Because of its ability to reduce anxiety and lower defensiveness, MDMA was perceived to enhance communication in therapy sessions (e.g., couples therapy). Currently studies are exploring the potential use of MDMA in treating posttraumatic stress disorder (Ruse, Jerome, Mithoefer, Doblin, & Gibson, 2008).

MDMA and other empathogens are included in the category "club drugs"—psychoactive drugs used recreationally at nightclubs or raves (weekend-long dance parties). Besides MDMA, common club drugs include GHB (soap), Rohypnol (roofies), ketamine (Vitamin K), methamphetamine (speed), and acid (LSD). When used recreationally, MDMA is rarely used alone. It is often used together with substances such as alcohol, marijuana, cocaine, and other club drugs (National Institute on Drug Abuse, 2006, 2008).

MDMA affects the brain by increasing the activity of the neurotransmitters (chemical messengers in the brain) serotonin, dopamine, and norepinephrine. Some animal research indicates that MDMA may also activate neurons that contain oxytocin, which is thought to increase sociability and bonding behaviors (Thompson, Callaghan, Hunt, Cornish, & McGregor, 2007). Side effects of MDMA may include anxiety, agitation, nausea, chills, clenching of jaws or grinding of teeth (bruxis), muscle cramping, and blurred vision. MDMA overdose can result in high blood pressure, faintness, panic attacks, loss of consciousness, and seizures. MDMA taken in conjunction with vigorous physical activity (e.g., dancing for many hours) can cause hyperthermia (a marked increase in body temperature); without prompt medical attention, this can result in high blood pressure, dehydration, kidney failure, and heart failure. Some tablets sold as Ecstasy contain other drugs such as methamphetamine, caffeine, dextromethorphan (a cough suppressant), ephedrine (a diet drug), or cocaine. The combination of MDMA and iprindole (a tricyclic antidepressant) can be fatal. Animal studies have demonstrated that MDMA taken during pregnancy can affect the brain of the developing fetus and have significant adverse effects on tests of memory and learning (Broening, Morford, Inman-Wood, Fukumura, & Vorhees, 2001). More research is needed to determine the effects of MDMA on the developing human fetus. After the effects of MDMA have worn off, MDMA users may experience anxiety, restlessness, irritability, aggression, sadness, sleep and appetite disturbances, decreased interest in sex, confusion, and impairment of attention and working memory (National Institute on Drug Abuse, 2006).

Another empathogen is MDA (Tenamfetamine), also known as the love drug. It was investigated as a possible treatment for Parkinson's disease in 1941 and as an antidepressant, cough suppressant, and appetite suppressant in the 1950s and 1960s. In 1953, Harold Blauer died of an MDA overdose in a U.S. army experiment into the use of MDA as a possible truth serum (Erowid, n.d.). MDA appeared as a recreational drug around 1963. MDA is more toxic than MDMA and can cause overstimulation of the central nervous system. MDMA analogs (offsh[illegible]), such as 4-MTA, are known

as Flatliners and Golden Eagles), continue to be developed. MDMA analogs, sometimes sold as MDMA, are considered designer drugs. Designer drugs, often developed in an attempt to circumvent existing drug laws, may be riskier than better known substances because limited research has been done to understand their toxicology and pharmacology, and their development and manufacture may bypass typical safety standards. In the United States, the Treatment of Controlled Substance Analogues section of the Controlled Substances Act (1986) makes it illegal to manufacture, sell, or possess many designer drugs, including MDMA analogs. According to the 2006 National Survey on Drug Use and Health (NSDUH), about 860,000 people over the age of 12 in the United States used MDMA for the first time in 2006, an increase from 615,000 first-time users in 2005. Most new users (70.1%) were 18 years or older; average age of first-time use in 2006 was 20.6 years of age. The Monitoring the Future Survey showed that past-year MDMA abuse among 12th graders in the United States increased from 3.0 percent in 2005 to 4.5 percent in 2007. In 2007, 6.5 percent of 12th graders reported using MDMA at some point in their lives (National Institute on Drug Abuse, 2008).

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Empathy

Empathy is feeling the inner experience of another person, particularly the person's emotions. Empathy also usually implies a "fellow feeling" and sympathy rather than an understanding that is utilized to manipulate another person.

Early personality theorists and psychotherapists, especially the humanists starting in the 1940s and 1950s, have spoken of the importance of the therapist's ability to empathize with the client. Additionally, more recently, researchers have taken up the task of studying empathy in some depth: the forms that it takes, how and under what circumstances it develops, ways to attempt to increase empathy, and contexts in which empathy is important.

Hoffman (2008) discusses five "modes of empathic arousal" that may operate individually or in combination with other modes to produce an empathic reaction in a person. The first is *mimicry,* which involves changing one's facial expression, voice, and posture in response to changes in the facial expression, voice, and/or posture of an individual to whom one is attending. Information about the muscle movements that the empathizer is making is fed back to the brain, and this information leads to feelings in the empathizer that are similar to feelings in the target (person with whom one is empathizing). The second is *conditioning.* An individual mentally associates her own emotion with the emotion of another. This may begin in the relationship between infant and mother. For example, the mother experiences fear. During her emotion, her body freezes; she makes particular facial expressions and vocalizations. The infant, who is being held, feels the freezing behavior and experiences distress. She learns to associate her mother's facial expressions and vocalizations with the freezing. Later, she can see and hear the facial and vocal markers of fear in another, even without being in physical contact with the other, and can feel that that individual is experiencing fear.

The third mode is *direct association.* This is when an individual had an emotional experience, for example, having been physically assaulted. Simply having had this experience can help one to empathize with another person when she has been physically assaulted. According to Hoffman, in these three modes, empathy is automatic and requires very little complex cognitive processing. He calls these forms of empathy "primitive" (although important) and states that they occur in infants as well as adults. The other two forms of empathy are more sophisticated: they involve higher-order thinking and do not require that the target of empathy be present. Sufficient language and cognitive development must be present for the following two types of empathy.

The fourth mode is *verbally mediated association.* This means that the plight and distress of the target is conveyed through language, either by the target himself in person, through a letter from the target, through the report of a third party, or perhaps in other ways. Thus the target's body language may not be available to produce empathy as in the other modes described earlier. If language is the only communication, the empathizer creates symbolic representations of the target (i.e., images of the target crying, moaning, bleeding, etc.) and is then able to feel the target's pain. If the target is present, other empathy modes (i.e., mimicry) may reinforce the verbally mediated association mode.

The final mode is *perspective taking,* or imagining oneself in another's place. Philosopher David Hume (1751/1957) believed that [illegible] psychological

makeups and life experiences and are therefore able to imagine themselves in the place of another and may thereby produce similar feelings in themselves. This mode is not automatic but requires the willfulness of the empathizer; significant powers of imagination and/or intense attention to the target person are required.

At least some aspects of empathy may be natural, perhaps hardwired, and others are learned. Hoffman (2000) reviewed the research on the socialization of empathy. He concluded that many parental behaviors can encourage empathy in children. For instance, a form of instruction that is likely to result in empathy, helping behavior, and guilt about harming others, is encouraging inductive reasoning. This may be used when a child harms or is considering harming someone. It involves instructing the child to consider the distress of the other person; this guidance may trigger the empathy-causing modes discussed earlier such as perspective taking.

Empathy is relevant to many life contexts. As Hoffman (2008) discusses, empathy can influence public sentiment, public policy, and law. Harriet Beecher Stowe's *Uncle Tom's Cabin* compassionately describes the living conditions of slaves in the American South, personalizing them to white Americans. The influence of this book, published in 1852, was immediate and profound. Stowe had been motivated to write because of empathy. As she cared for her dying son and then buried him, she felt the intense suffering that a "poor slave mother" could feel when her child is taken away. This very personal empathy developed into righteous anger at the conditions that slaves faced, and Stowe was motivated to do something to make a difference, resulting in the writing of her novel. Hoffman also argues that empathy has played a part in the creation of many laws, including those regarding desegregation and a woman's right to choose.

Empathy is important in the mental health field. For instance, American psychotherapist Carl Rogers identified empathy as an important attribute of a psychotherapist; empathy in the therapist-client relationship is necessary if the client is to grow psychologically. A dysfunction in empathizing is a primary characteristic of a number of mental health conditions, including antisocial personality disorder and autistic spectrum disorders (ASDs). In ASDs, the deficit is primarily cognitive (involving the ability to take another's perspective) rather than affective or emotional; individuals with ASDs may have no deficit in feeling empathy. Additionally, empathy is relevant to social psychologists who are interested in altruistic behavior. Having empathy for someone increases the probability that one will help that other person (Batson, 1991).

See also autistic spectrum disorders, client-centered therapy, personality disorder, Carl Rogers, theory of mind.

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Schadenfreude—derived from the German *Schade* (adversity, harm) and *Freude* (joy)—means taking enjoyment in another's pain or misfortune. Schadenfreude is the flip side of empathy: similar cognitive abilities are used (e.g., perspective taking, awareness of others' emotions), but the result is not sympathy or a desire to help another person but rather a sense of pleasure when another person experiences pain or distress. The Buddhist concept of *mudita* (happiness in another's good fortune, sympathetic joy) is closely aligned with empathy, pity, or compassion (unhappiness at another's misfortune). Schadenfreude is related to envy; brain imaging studies show that when a person feels envy, brain regions associated with physical pain (i.e., the anterior cingulate cortex) are activated. When a person one envies experiences a misfortune, triggering feelings of Schadenfreude, the ventral striatum (a brain region associated with pleasure and reward) is activated (Takahashi et al., 2009).

Encounter Group

The purpose of participation in an encounter group is to produce a variety of positive changes in its participants, including encouraging personal growth, enhancing empathy and understanding of others, and/or facilitating knowledge about group dynamics through direct experience. Encounter groups are similar to group therapy, and the same or similar techniques may be used, but group therapy typically focuses on aiding the mentally ill, whereas encounter groups tend to involve mentally healthy participants.

Two of the most prominent types of encounter groups are T-groups and Rogerian encounter groups. T-groups (training groups) were first organized by American social psychologist Kurt Lewin in 1946. These were meetings of about 10 people that would occur over several hours to allow coworkers to express feelings and thoughts about workplace issues. The group members engaged in discussions, role-play, and other exercises. Group leaders began to comment on individual members' ways of interacting with others, general group dynamics, and so forth. Lewin and others soon noted the value of these observations; group members could learn about group processes, how they are perceived by others, how they can most effectively communicate, and so on. In 1950, the National Training Laboratory (NTL) was founded in Bethel, Maine. NTL was created to train people how to use groups to improve interpersonal relations, leadership, and effectiveness in organizations. These groups became popular

with businesses, government agencies, and schools. T-groups are often now called *sensitivity groups.*

Rogerian encounter groups were initiated by American humanistic psychotherapist Carl Rogers in 1970. Rogers applied his client-centered therapy philosophy, which was initially utilized in individual therapy, to groups. Thus the purpose of interacting in encounter groups is to allow for personal growth. The group leader creates an atmosphere of empathy and acceptance. Participants can then feel safe to be genuine and honest in their expressions. It is expected that mutual trust among group members will follow. As the members genuinely begin to feel accepted by others, they will then experience self-acceptance and the recognition of their true, deep potential.

Each encounter group has a leader or facilitator, but she may or may not be a trained professional. Although some such as Carl Rogers have praised encounter groups, others have criticized them. Lieberman, Yalom, and Miles (1973) argued that participation in an encounter group can cause harm. For instance, since members are encouraged to be honest, their honesty can sometimes be brutal, leading to psychological problems (depression, low self-esteem, etc.) in vulnerable participants. Encounter groups still exist, but not at the level of popularity that they enjoyed in earlier decades.

See also client-centered therapy, humanistic psychotherapy, Carl Rogers.

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Endogenous Depression

The endogenous-exogenous distinction in psychiatry, a mental illness classification dichotomy based on cause, was introduced by German neurologist Paul Julius Mobius in 1893 (Shorter, 2005). Soon after, prominent psychiatrists, including the German Emil Kraepelin, adopted or adapted this basic division as they attempted to understand mental illness. If a mental illness is endogenous, it is caused by internal biological factors such as genetic causes and abnormality in brain chemistry. Exogenous, or reactive, mental illness has external causes such as dietary factors, ingestion of toxins, or stressful events, for example, loss of a loved one or being fired at work.

This dichotomy has been applied to depression since the early 1900s, but viewing depression in this way is highly controversial today. When applied to depression, endogenous has typically meant that it is caused by heredity or abnormal brain chemistry. When viewing depression as exogenously caused, the focus has most often been on psychosocial sources such as specific stressful events, with less focus on external biological factors such as toxins.

This early concept of different types of depressions assumed that typically, exogenous depressions would be more likely to resolve easily, would be of limited duration, and would be treatable through therapies. Endogenous depressions, which were sometimes viewed as "without cause" (because if there was an internal biological cause, it was so difficult to determine the cause actually what would be

relatively resistant to treatment, relatively long lasting, and more amenable to biological treatments, including medication and electroconvulsive shock therapy rather than psychotherapy treatments (Gordon, 2008). Additionally, conceptions of endogenous depression included an emphasis on the physical symptoms of depression such as psychomotor retardation (slowing down of movement), sleep disturbance, weight loss, and lack of response to changes in environment that could enhance one's mood.

Results of studies as early as the 1930s called the endogenous-exogenous distinction into question. For instance, Lewis (1934), in a study of 61 patients, argued that his results indicated that depressions typically involve combinations of environmental and biological causal factors. However, despite research such as Lewis's, the way that depression was officially viewed in the United States by the American Psychiatric Association continued to include the endogenous-exogenous distinction for the better part of the 20th century. A change began with the publication of the 1980 version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III;* American Psychiatric Association, 1980), the official manual used in the United States for diagnosing mental disorders; in the *DSM-III* the distinction between endogenous and exogenous depression was minimized. In the versions of the *DSM* that followed (*DSM-IV,* 1994, and *DSM-IV-TR,* 2000), depression began to be diagnosed based on symptoms rather than on presumed cause (Gordon, 2008).

Although the *DSM* no longer recognizes endogenous depression, some mental health professionals behave as if such depressions exist. Gordon (2008) discusses a number of reasons for the maintenance of this unsupported idea, including the pressure from health insurance companies, which encourage psychiatrists to prescribe medications for mental illness rather than recommending more costly treatments such as psychotherapy. Viewing depression, or some depressions, as endogenous can help an individual psychiatrist to justify medication as a treatment choice.

See also depression, dysthymia, major depressive disorder, postpartum depression.

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Endoscopic Sympathetic Block

Endoscopic sympathetic block (ESB) is also k[illegible] as endoscopic [illegible] sympathectomy, sympathectomy, endoscopic sympa[illegible]olo[illegible]coendoscopic

sympathectomy, or sympathicotomy. ESB is a surgical procedure that involves cutting, cauterizing (sealing off), or clamping ganglions (nerve bundles) along one of the sympathetic nerve trunks that lie on either side of the spine. ESB has been used to treat excessive sweating (hyperhidrosis), facial blushing, and social phobia.

Social phobia describes significant anxiety in response to social or performance situations and often leads to avoiding situations in which individuals fear they may act in a way that is humiliating or embarrassing. According to criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR;* American Psychiatric Association, 2000), adolescents and adults with social phobia recognize that their fear is excessive or unreasonable. The symptoms of social phobia cause significant distress or interfere significantly with an individual's social or occupational functioning. Physical symptoms of social phobia (similar to those of other anxiety disorders) are related to physiological arousal of the sympathetic nervous system (SNS) and may include racing heart, sweating, trembling or shaking, shortness of breath, chills or facial flushing (blushing), dizziness, lightheadedness, or nausea.

The SNS is more active when an individual experiences stress and is responsible for the fight-or-flight response, which helps prepare the body to flee from or confront a threatening situation. The SNS is instrumental in perspiration (sweating), blood pressure, pupil dilation, skin flushing (e.g., facial blushing), and regulating body temperature. By interrupting signals traveling between the SNS and the brain, the ESB procedure seeks to eliminate certain SNS responses such as sweating or facial flushing. Sympathectomy was first used to treat exopthalmos (bulging eyes) in Basedow's disease in 1896 and angina pectoris (severe chest pain) in 1913. It was proposed as a treatment for facial blushing in 1985 (Pohjavaara, 2004). In 1998, Finnish surgeon Timo Teleranta proposed ESB as a treatment for social phobia when more conservative treatments (e.g., medications, psychotherapy) had failed (Teleranta, 1998). Early sympathectomies were more invasive, involved destruction of more tissue, and resulted in more negative outcomes than current ESB procedures. The clamping procedure utilized in the ESB is intended to be reversible, in case of unforeseen side effects. However, reversal (unclamping) must be performed relatively soon after the initial surgery and effects may not be completely reversible.

Side effects of ESB may include compensatory sweating (excessive perspiration in various areas of the body), gustatory sweating (sweating while eating), dry skin, difficulty regulating body temperature, and vulnerability to heat stroke. ESB may result in abnormal sympathetic nerve sprouting, which can connect to sensory nerves causing pain. Horner's syndrome is a rare side effect of ESB, resulting in droopy eyelids and dilated pupils. Some side effects do not manifest until a year or more after ESB surgery and may relate to changes in body weight, hormone levels, or changes in the weather. ESB treatment is controversial, partly due to negative outcomes and side effects in many ESB cases. It has been proposed that ESB may help alleviate migraine; phobic, paranoid, or confused symptoms of schizophrenia; and SNS disturbances in Parkinson's disease (Telaranta, 2003). However, others caution that "there is risk for devastating consequences if you interfere in their treatment with methods that do not have a strong scientific support" (Fahlén, 2003, p. I/21). A systematic review undertaken by the Finnish Office for Health Care Technology Assessment concluded that "due to lack of controlled trials there is no reliable evidence for the effectiveness of endoscopic thoracic sympathectomy for excessive sweating in the face and hands or

for flushing of the face. Neither is there any evidence that this treatment has an impact on social phobia. . . . [ETS] is associated with significant immediate and long-term adverse effects" (Malmivaara, Kuukasjärvi, Autti-Rämö, Kovanen, & Mäkelä, 2005, p. 6).

Typical treatments for social phobia are medications and psychotherapy. Medication treatments include antidepressants, anxiolytics (e.g., Valium or other benzodiazepines), or beta blockers (e.g., propranolol). Types of psychotherapy used for social phobia include cognitive-behavioral therapy (CBT), social skills training, exposure therapy, anxiety management training (to develop coping mechanisms, e.g., deep breathing), cognitive restructuring, behavior therapy, and psychoanalysis or psychodynamic psychotherapy (Pohjavaara, 2004).

See also antidepressant, anxiety, anxiolytic, phobia, sympathetic nervous system.

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Environment

Along with genetic influences, environmental factors clearly affect the development of emotional characteristics. Environmental influences on a developing child are numerous: treatment by parents, treatment by siblings, socioeconomic status, school influences, peer interactions, and biological influences (e.g., nutrition, ingestion of toxins, viral and bacterial infections). Research on environmental influences (which usually studies genetic influences at the same time) divides up these influences into *shared environment* and *nonshared environment.* Shared environment comprises environmental factors that people have in common. For instance, shared environment is often studied in the context of siblings' experience, and their shared environment typically comprises family conditions such as parental socioeconomic status, religious traditions, neighborhood, nutrition at home, and so forth. Siblings may also have other shared environments such as the same church situation or possibly the same school situation if they are twins in the same classrooms. Research has behaved as if shared environment is family circumstances and in[illegible]tions. Note also that although

it is assumed that family is shared environment, aspects of a family situation may not actually be a shared environment because parents may treat their own children quite differently from one another. Nonshared environment is everything else. Common nonshared environmental factors that have been studied in regard to the development of emotional traits are school influences, including teacher behavior and peer influences.

Environmental factors affect emotional traits. For example, Bouchard and Loehlin (2001) reviewed research and reported a significant influence of the environment on the development of extraversion, which is associated with positive emotions, and neuroticism, which is negative emotionality. This widely cited review and other studies generated a great deal of discussion and further research because the results indicated that nonshared environment greatly affected emotional traits (and other personality traits), whereas the influence of shared environment was practically nil. Psychologist Judith Rich Harris (1995, 2009b) wrote a popular book in which she reviewed research in this area and drew the controversial conclusion that parents have practically no impact on their children's personality traits (including emotional ones) at all, arguing instead for the influence that peers and others have. These developments led to more serious thinking and research on what exactly constitutes shared environment and nonshared environment, why results in these studies indicate such a small influence of shared environment, and whether the results are valid. As some scholars have pointed out (e.g., Funder, 2010), it is hard to believe that parents barely influence their children—could it really be the case that the death of a parent has no effect? That it does not matter whether a parent supports his child in her educational goals? Or even that a parent may continuously physically abuse his child with no effect? If so, then why bother being a good parent at all?

Many scholars have challenged the conclusions of Harris and others. First, a great deal of research in developmental psychology has demonstrated significant influences of child-rearing style, family environment, and social class on personality (e.g., Baumrind, 1993). Funder (2010) argues that when emotional traits are measured in ways other than self-report, for instance, behavioral observation, the effects of shared environment are revealed. For example, in a large study in which twins' personality traits were rated through observing their behavior, all major traits except extraversion were influenced by shared environment (Borkenau, Riemann, Angleitner, & Spinath, 2001). While Harris has challenged the field to think more carefully about environmental influences on personality, Harris herself states that most developmental psychologists now disagree with her thesis that parents have little effect on their children's personalities (Lerher, 2009).

Environmental factors affect specific negative emotions. For instance, in a large study of Australian twins, Kendler, Heath, Martin, and Eaves (1986) reported that environmental factors influence symptoms of anxiety and depression. The study of the influence of environment and genetics on emotional traits has reached a high level of sophistication compared to a few decades ago. Genetics has advanced significantly as a field, and scholars such as Judith Rich Harris have challenged us to think carefully about what the "environment" is and in particular how parents affect their children.

See also family, genetics.

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Judith Rich Harris never earned a doctoral degree. When she received the George A. Miller award from the American Psychological Association (APA) in 1998—presented each year to the writer of an outstanding article in psychology and named in honor of George A. Miller, an eminent cognitive psychologist—she started her address by reading aloud a letter she had received from George A. Miller 38 years previously. The letter was from then acting chair of the Harvard Department of Psychology, explaining that the department had decided not to let Ms. Harris stay on for a PhD degree, toward which she had been working. As Harris explains in her 2006 book, "they had decided that I wasn't worthy of a Ph.D. . . . because they didn't think I had the 'originality and independence' to live up to Harvard's standards" (Harris, 2006, pp. 51–52). Later, the APA was criticized for giving Harris the award. The biggest controversy came from developmentalists who disagreed with Harris's assertions in her book *The Nurture Assumption* (1995), which had been released a few days after she accepted the APA award in San Francisco.

Since the late 1970s, Harris has suffered from lupus and systemic sclerosis, both chronic autoimmune disorders that have affected several different organs, most recently her heart and lungs. While bedridden for a period of time in the late 1970s, Harris worked out a mathematical model of visual search, which was published in two articles in the journal *Perception and Psychophysics* (Harris, 2009a).

The Epicureans

The followers of the Greek, Epicurus (341–270 BC), were not self-indulgent or obsessed with pleasure, as the word *epicurean* would suggest. Rather, they were concerned with the good life, which they saw as one of kindness and thoughtfulness toward others. Strong passions can interfere with or even sabotage the good life, and therefore Epicureans believed in learning how to control or temper emotions. They professed that pleasure in life is important, but only the simple pleasures. It is the strong passions that can get one into trouble.

The Epicureans were among the first Western people to carefully and thoughtfully consider our emotions. Since they believed that emotions can be so troublesome, they argued that we should eliminate, or attempt to eliminate, some aspects of emotional experience to live the rational, simple life. They recognized that once an emotion begins, one cannot turn it off. Therefore we have to control our goals or desires before an emotion takes place. Many of the things that humans desire—money, fame, passionate sex (perhaps without love), and power—are not really valuable or lasting. We need to control what we desire.

The Epicureans made an analogy to the experience of children. Children do not hunger for fame, power, or money. Instead, the child is happy and content with friendship, playing, and affection. Pleasure is important, but we should enjoy the simple things, like the child does. The simple things are real and attainable. It is good to enjoy food, sex, and wine. But we do not need gluttony, unquenchable lust, or incessant partying.

The Epicureans lived together as a group of friends. Their way of thinking had some influence in Greece for hundreds of years. As Oatley (2004) argues, the Epicurean emphasis on the simple and natural was central to the Romantic movement. Also, the U.S. Founding Fathers' belief in the rights of humans to experience liberty and the pursuit of happiness derives from Epicureanism. This philosophy has been influential throughout the West.

See also the Stoics.

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Ethnocentrism

Ethnocentrism is the tendency for an individual to view other cultures from the perspective or vantage point of his own cultural values and beliefs. The term *ethnocentrism* was coined by American political scientist William G. Sumner in his classic text *Folkways: A Study of the Sociological Importance of Usages, Manners, Customs, Morals, and Mores*, which was originally published in 1906 (Sumner, 1906/2006). He described ethnocentrism as viewing one's group as the center and creating in-groups and out-groups. He stated that each group views itself as superior and treats out-groups with contempt.

As others point out, however, such negative attitudes and behaviors against others, such as disparagement and discrimination, are not necessary consequences of ethnocentrism, which is fundamentally centered around the way one views one's own culture. As Tajfel, Nemeth, Jahoda, and Campbell (1970) found, children show a preference for their own countries even when they are too young to understand the concept of a nation. Thus Tajfel and colleagues argue that this type of attitude (they studied an attitude related to ethnocentrism, nationalism) can be unconscious and unintentional. In their discussion they make clear that there can be a distinction between a positive attitude toward one's own culture and a negative attitude toward other cultures.

In most conceptions of ethnocentrism, however, scholars do include negative attitudes or behaviors toward others (out-groups) as a fundamental component. In a modern review of the topic, in which this broader view of ethnocentrism was utilized, ethnocentrism is described in regard to its impact on attitudes toward important international issues such as the war on terror, immigration, and humanitarian aid (Kinder & Kam, 2010). Butera and Levine (2009) have edited a scholarly book on in-group and out-group formation, the effects of membership in a minority group, and coping with both minority status and majority status.

See also attitude, culture, hate crimes, prejudice.

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Euphoria

Euphoria is an emotion that involves both intense happiness and a strong feeling of well-being. Euphoria is often viewed as outside of the realm of normal, everyday experience, most often associated with drug experiences or with psychiatric conditions such as mania. For instance, in a search of the PsycINFO database conducted in August 2009 (PsycINFO indexes and serves as a clearinghouse for scholarly writings in psychology and related fields), a substantial number of articles, book chapters, and dissertations that included "euphoria" in the title—25 out of 54, all such works indexed by PsycINFO between 1914 and August 2009—dealt with drug-induced euphoria. However, euphoria can result from ordinary, everyday experiences that have no negative connotations, including orgasm, athletic activity and achievement, religious and spiritual experiences, meditation, and others. For example, Corby, Roth, Zarcone, and Kopell (1978) described the euphoria that can result from Tantric yoga meditation.

Euphoria is described as a potential symptom that should be assessed as part of a mental status exam. A mental status exam is part of the diagnostic process used most frequently in the United States for psychiatric diagnosis, as recommended by the

American Psychiatric Association (other parts of the diagnostic process include attaining a medical history, attaining a personal and social history, and actual diagnosis, among others). James Morrison (2007) describes the beginning of the diagnostic process, including the mental status exam, in his book *The First Interview.*

See also ecstasy.

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Euthymic Mood

The word *euthymia* comes from the Greek roots *eu* (good or normal) and *thymos* (mood or emotion). It means being in a good or neutral mood—neither extremely negative or sad (as in dysthymia) or extremely positive or elated (as in euphoria). Euthymia was described by the ancient Greek philosopher Democritus (460–370 BC) as a desirable state of gladness, good mood, or serenity. The term *ataraxia* (meaning "tranquility" or "calmness") was used by the philosopher Epicurus (341–270 BC). Euthymia differs from hedonism, a state of seeking pleasure.

The term *euthymia* is relevant when discussing mood disorders such as bipolar disorder. An individual with bipolar disorder alternates between states of depression and mania. Mania may be characterized by high energy, euphoria, pressured speech, upbeat mood or irritability, and risk-taking behaviors. When discussing bipolar disorder (or major depressive disorder), dysthymia indicates a sad or depressed mood, while euthymia indicates a more neutral, nondepressed mood. When describing the mood and demeanor of an individual with bipolar disorder, euthymia would describe a neutral state, with characteristics of neither depressed nor manic mood.

See also ataraxia, bipolar disorder, depression, dysthymia, major depressive disorder.

Evolutionary Psychology (Human Sociobiology)

Evolutionary psychology is a fairly new discipline that focuses on the study of the evolutionary basis of social behavior in humans. Darwin, who introduced the theory of evolution in *On the Origin of Species by Means of Natural Selection* (1859), focused largely on physical traits. Evolutionary psychologists argue that social traits (behavior, thoughts, and emotions) have also evolved by way of natural selection.

General principles of the theory of evolution are as follows:

- Organisms vary in their characteristics.
- Organisms are engaged in a struggle for survival. Some organisms will survive and others will not survive.
- Some characteristics will lead to greater survivability and greater reproductive success.
- One's descendents are also likely to have those characteristics that lead to greater survivability and reproductive success. Therefore these successful characteristics themselves survive.

In his classic text, Darwin explained how a physical trait such as the bone weight of a bird or the camouflage coat pattern of a wild cat could lead to greater survivability of that individual and of its species. Evolutionary psychologists argue that psychological/social traits may also lead or may have led to greater survivability for humans. For example, an evolutionary psychologist may argue that the tendency for a mother to love and be attached to her offspring creates a survival advantage for our species. The fact that this characteristic tends to be a part of our nature is precisely because it is advantageous; those women who loved their children took care of their children. This trait, loving children, was passed genetically to their own children and thus is a common trait in our gene pool.

To explain the existence of a characteristic in our gene pool, evolutionary psychologists appeal to the hunter-gatherer era of humans because this type of culture existed for much of our evolutionary history, possibly for as long as two million years. Evolutionary psychologists have discussed traits that are clearly advantageous, such as loving one's offspring, but they have also discussed abnormal characteristics and explained how they may have evolved. For instance, paranoia may have evolved and thus remains in our gene pool because it would have been advantageous to be vigilant (what would now be considered hypervigilant) during the hunter-gatherer period, when humans faced very real physical threats from predators on a regular basis. As another example, clinical depression, a syndrome involving many traits including sad mood, negative thinking, and low activity levels, may have evolved as a way for humans to conserve energy; the depressed person tends to remain at home, expending very little energy.

An application of evolutionary psychology that is controversial is the explanation of sex differences in mating behavior. Some evolutionary psychologists, including Buss (1994), have argued that women and men have developed very different mating strategies and mate preferences because doing so has led to greater reproduction of the species. Buss presents data that suggest that across cultures, men tend to prefer polygamy, whereas women prefer monogamy. The evolutionary explanation is based on the number of sex cells that women and men possess. Men produce millions of sperm per day. It is evolutionarily advantageous for the man to use as many of these sex cells as possible. If he impregnates a female, she is out of commission for nine months, and thus it is to his advantage to impregnate a different woman. Put bluntly, he would desire to impregnate as many women as possible. (This reproductive desire is not necessarily conscious, but those men who prefer polygamy would have produced more offspring, and thus this preference is common in men.) By contrast, women have only a few hundred sex cells (eggs) in a lifetime. A woman's eggs, being few in number, are precious to her. Also, once she is impregnated, she is nearly always unable to become pregnant again for nine months. If she is to be a reproductive success, she will take care of this fetus. It is to her advantage to attract a man who will stay with her during the pregnancy and for a period of time after the baby is born, and possibly for the entire time that she takes care of the child. Therefore woman will tend to prefer monogamy.

Another argument made by Buss and others is that women and men evolved to prefer different qualities in mates. A man prefers youth and beauty because these are signals that a woman is capable of childbearing (younger women are obviously more fertile, and beauty is described as a sign of physical health and therefore fertility). By

contrast, a woman prefers a man with resources so that he can help to take care of her and the child or children. In modern times, the best resource is money. Additionally, older age tends to be associated with more resources, and thus women are attracted to older men.

Evolutionary psychology is a hot topic today. It is both popular and controversial. Excellent introductions to the topic include Gaulin and McBurney (2001), who discuss the main concepts of evolutionary psychology, and Buss (1999), who covers research studies on evolutionary psychology.

See also Charles Darwin, genetics, Edward O. Wilson.

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Existential Psychotherapy

Existential psychology arose in the 1940s and 1950s as part of a larger movement in psychology that also included humanism and phenomenology (a focus on individuals' subjective experiences). This larger movement was the *third force*, so called by American psychologist Abraham Maslow, a reaction to the two leading paradigms in psychology at the time: Freudianism and behaviorism. The proponents of the third force saw Freudianism and behaviorism as highly deterministic and dehumanizing and sought different ways of viewing human nature.

A fundamental idea behind existential psychology is free will, the freedom to choose. Existentialists and others representing the third force argued that neither Freudianism nor behaviorism made allowances for free will; according to Freudians, human behavior is largely controlled by unconscious factors, and according to behaviorists, much of human behavior is caused by external circumstances. From an existentialist point of view, contrariwise, humans are free to choose both what they think and how they will behave.

Existential psychology is rooted in existential philosophy, particularly the writings of Soren Kierkegaard (1813–1855), Martin Heidegger (1889–1976), and Jean-Paul Sartre (1905–1980), among others. A number of basic assumptions and principles form the foundation of existential philosophy. As described earlier, one principle is that humans have free will; each person is free to choose among behavioral (and attitudinal) options at any given moment. Along with free will comes responsibility. A bad childhood does not excuse bad adult behavior; the individual has chosen the effects that the bad childhood has [illegible]. Another assumption is that life has no intrinsic meaning. Thus life puts [illegible] in a position where [illegible] must search for our own

meaning. Life may be experienced as meaningful through many, diverse routes, and each person chooses unique meaning, which may transform from moment to moment. Another assumption is the importance of phenomenology, an individual's particular perception or experience. Each of us has our own way of viewing experiences. In a family with children of similar age who sit together with their siblings and parents at dinner and who all ride together in a car as they go on vacation, these children may nonetheless, despite that they may seem objectively similar in a number of ways, have very different perspectives on events—the parents' argument during dinner or the hysterical laughing that occurred in the car while on vacation. These differences in perspective are each child's unique phenomenology. To completely understand one another, people must be aware that life is experienced by each individual through his own, unique, selective filter. Understanding others requires an open-minded, nonjudgmental attitude.

The first existential psychotherapist was Swiss psychiatrist Ludwig Binswanger (Smither, 2009), a student of Carl Jung and close friend of Sigmund Freud. In his book *Foundations and Knowledge of Human Existence*, published in 1942, Binswanger described different levels of existence and modes of interpersonal relations. The highest level is *Eigenwelt*. Individuals operating at this level are self-aware and self-actualizing. They experience life in relation to their own personal meanings; the norms of society and opinions and judgments of others are secondary to the individual's own values and perspectives. Binswanger believed that most people crave purpose in their lives, but many do not know their purpose. Many people, in their search for meaning and direction, make decisions without thinking such as following an organized religion or joining a political cause. This lack of authenticity causes suffering.

Other existential therapists came after Binswanger, including Austrian psychiatrist Viktor Frankl, famous for inventing his own form of psychotherapy, *logotherapy* (*logos* means "meaning" in Greek). In logotherapy, the client is encouraged to find his own meaning in life. Frankl describes a number of ways that people experience meaning, including creating or accomplishing something, giving to others, and loving another. In logotherapy, the therapist presents the client with alternative ways of looking at events, in an attempt to reveal the client's unique meaning or purpose in life. Frankl eloquently describes his philosophy, in addition to his experience as a captive in a number of concentration camps in World War II, in his book *Man's Search for Meaning* (Frankl, 1962).

Another noteworthy existential psychotherapist is American psychiatrist Irvin Yalom. Yalom sees existential anxiety as the root of most neurosis. In his book *Existential Psychotherapy*, published in 1980, he describes four causes of existential anxiety: fear of death, human freedom (which means that we are responsible for our choices), isolation (humans enter and exit this existence alone), and meaninglessness. Yalom is also well known as a group psychotherapist and applies his existential principles to both individual and group therapy.

Existential psychotherapy exists in the present day; however, it is not nearly as popular as other forms of psychotherapy such as cognitive-behavioral or behavioral psychotherapy. Additionally, existential psychotherapy is difficult to test empirically for a number of reasons, including that it assumes individual meanings rather than general laws of human nature. However, some research lends support to fundamental principles of existential psychology or psychotherapy. For instance, research indicates

that most people value meaning in life more than they value wealth (King & Napa, 1998). Additionally, therapy is more effective if the therapist recognizes the client's phenomenological perspective (e.g., Walsh, Perrucci, & Severns, 1999).

See also alienation, anomie, client-centered therapy, encounter group, experiential therapy, Viktor Frankl, Gestalt therapy, humanistic psychotherapy, logotherapy, Abraham Maslow, Carl Rogers.

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In Kurt Vonnegut's (1963) novel *Cat's Cradle*, he describes human beings as nothing more than a lucky pile of mud. People are chemically very similar to mud, composed largely of water and chemicals that make up dirt. In the novel, God gives some piles of mud—the lucky ones—the abilities to look around, move around, and have self-awareness. Unlucky mud was given no such gift; it simply exists without awareness of itself or of anything else in the world.

Since we are lucky mud and could just as easily have been unlucky mud (according to Vonnegut), it is to our advantage to experience the world as much as we can, to examine our lives and to appreciate our existence, realizing how special it is to be alive and observing the world. Many people fail to do these things; they live inauthentically and suffer from their failure to create a meaningful life (Funder, 2010).

Experiential Therapy

Experiential therapy is a broad term that is applied to a collection of therapies that focus on the client's *experiencing* dealing with outside of therapy, which means being aware of thoughts, feelings, sensations, and other subjective experiences that occur

in the moment, and ultimately expressing them. Experiential therapies include Carl Rogers's client-centered therapy, existential therapy, and Gestalt therapy, each of which originated in the 1940s and 1950s. An assumption behind experiential therapy is that humans are self-aware and reflective and have unique ways of experiencing the world. The two primary foci of experiential therapy are experiencing, as described earlier, and the importance of the therapist-client relationship in facilitating change in the client, particularly, the ability that the empathic and validating therapist has to encourage the client's experiencing (Gendlin, 1964).

Experiential therapy involves a variety of techniques centered around *experiencing*. For instance, clients are encouraged to feel their present feelings deeply and to express these feelings in therapy (e.g., crying, expressing anger). Clients are encouraged to self-reflect and introspect, becoming aware of both transient experiences (e.g., perceptions, feelings) and more long-lasting characteristics of oneself such as values, constructs, and the like.

More modern versions of experiential therapy have developed, particularly that of Greenberg and his colleagues (e.g., Greenberg, Rice, & Elliot, 1993), who, in addition to emphasizing the traditional cores of earlier experiential therapies (experiencing, importance of the therapeutic relationship), also stress the importance of emotion in human functioning. Emotions are viewed as being central to the well-being of persons and as related to people's abilities to problem solve, change, and function in general.

Experiential therapy has been used to treat a variety of psychiatric conditions, including eating disorders, anxiety, posttraumatic stress disorder, substance use, borderline personality disorder, and depression. It may also be used with children, in altered form.

See also client-centered therapy, encounter group, existential psychotherapy, Gestalt therapy, humanistic psychotherapy.

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Exposure with Response Prevention

Exposure with response prevention (ERP) is a cognitive-behavioral technique that is best known as a treatment for obsessive-compulsive disorder (OCD). ERP has also been used to treat Tourette's syndrome, phobias and anxiety, bulimia, body dysmorphic disorder, drug and alcohol cravings, and hypochondriasis, with varying degrees of success (McKay et al., 1997; Mclean, Whittal, & Thordarson, 2001; Simpson, Liebowitz, & Foa, 2005; Toro et al., 2003; Visser & Bouman, 2001).

ERP generally starts with a person making a [illegible] thoughts or situations that cause fear or anxiety as well as listing rituals or [illegible]dance behaviors [illegible]ch she

engages to reduce her anxiety. Then she assigns each anxiety-provoking situation or behavior a value on the Subjective Units of Distress Scale (SUDS; where 1 equals no anxiety at all and 10 equals maximum anxiety possible). The person generates a fear hierarchy and exposes herself to a situation (trigger) she fears (starting with the least feared situation) for gradually increasing lengths of time each day *without* engaging in her typical rituals or avoidance behaviors (response prevention). The idea behind regular, repeated exposures is that the person will become habituated to the trigger, reducing the SUDS level. Once the person experiences lower SUDS levels for one trigger, she starts exposure to a trigger higher up on her fear hierarchy.

Treatments other than ERP that have been used for OCD include cognitive therapy (CT) and cognitive-behavioral therapy (CBT) and some medications (e.g., antidepressants). ERP has been shown to be a more effective treatment for OCD than progressive muscle relaxation, generic anxiety management techniques, and placebo pills and has been determined to have effectiveness greater than or equal to pharmacotherapies such as clomipramine (a tricyclic agent with antidepressant and antiobsessional properties). A 2005 study showed that while both CT and CBT are more effective for OCD than no treatment at all, and both have a lower dropout rate than ERP, neither CT nor CBT (alone or combined with ERP) is more effective than ERP alone (Abramowitz, Taylor, & McKay, 2005). Ideally, some of the exposure exercises should be done with the therapist (within-session ERP), with other exercises done as homework between therapy sessions (Abramowitz et al., 2005). Authors of a study with 72 participants that compared telephone and face-to-face therapy claimed that ERP can be done effectively with minimal face-to-face contact between the therapist and the patient (Lovell et al., 2006). This study utilized a model where therapists helped clients design exposure tasks and reviewed ERP homework with clients, but each client practiced ERP on his own (as homework).

Average symptom reduction for OCD patients receiving ERP typically exceeds 50 to 60 percent but does not eliminate symptoms completely (Abramowitz et al., 2005). ERP is not an effective treatment for everyone with OCD—ERP has been shown to be less effective for those who have poor insight into the senselessness of their obsessions (overvalued ideation). Some people cannot tolerate the distress and anxiety associated with repeated exposure exercises, so ERP treatment has a high dropout rate.

See also antidepressant, cognitive therapy and cognitive-behavioral therapy, obsessive-compulsive disorder, phobia.

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Extraversion

Among the most well-known and well-researched traits in personality psychology is extraversion, a collection of attributes that includes sociability, positive emotion, activity and assertiveness, excitement-seeking, and sometimes impulsiveness. Extraversion is a trait continuum such that each individual possesses anywhere from very low amounts of extraversion (which is called *introversion*) to very high amounts (called *extraversion*). Most people actually fall somewhere in the middle of the continuum, and neither label—"extravert" nor "introvert"—describes these persons very well. These individuals are called *ambiverts*.

The person who is extremely high in extraversion frequently experiences positive emotion. Some researchers (e.g., Watson & Clark, 1997) argue that the positive emotion causes many of the other subtraits of extraversion; it is the extravert's happiness, joy, and excitement that leads to sociability, activity, assertiveness, and other qualities. In conjunction with the positive emotion, extraverts have more positive experiences than people who are not extraverts. For example, compared to introverts, extraverts live longer, are healthier, are more successful in relationships, are more satisfied in their jobs, and are more likely to be leaders (Ozer & Benet-Martínez, 2006). Perhaps counterintuitive, extraversion has nothing to do with negative emotion. Although extraverts experience more positive emotion than introverts and ambiverts, they do not experience any more or less negative emotion. Therefore an extravert could experience low, moderate, or high amounts of negative emotion compared to other people.

Some researchers have hypothesized that extraversion may have a biological basis. For example, British psychologist Hans Eysenck proposed that the trait continuum extraversion-introversion is related to activity of a brain structure, the reticular activating system, a set of nerve fibers extending from the spinal cord into the interior of the brain. The reticular activating system is responsible for physiological arousal. Eysenck's hypothesis was that extraverts' brain activity in this area is low whereas introverts' activity is high. Because of the low activation in the brain, Eysenck argued, extraverts seek stimulation from the outside world. Conversely, introverts are overaroused and thus choose to withdraw from stimulation. In general, research has not supported this idea that brain activity associated with general arousal is any different in extraverts or introverts. More recent theories center on a chemical messenger in the brain that is implicated in pleasure and reward called *dopamine*. Results of one study indicated that in a specific laboratory situation, dopamine was more active in extraverts' than in introverts' brains (Depue, Luciana, Arbisi, Collins, & Leon, 1994). If a reliable relationship exists between extraversion and dopamine, it is likely complex, and research in this area is ongoing.

See also affective personality traits, introversion, PEN model of personality, personality, positive emotions, sensation-seeking and risk-taking.

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Eye Movement Desensitization and Reprocessing

Eye movement desensitization and reprocessing (EMDR) is an integrative psychotherapy approach developed in 1987 by clinical psychologist Francine Shapiro. EMDR is a method used to desensitize clients to distressing memories, feelings, and cognitions (thoughts) and to replace negative thoughts with positive ones (Rubin, 2003). When a traumatic event occurs, it is often accompanied by strong negative feelings and dissociation. Recall of the traumatic event is thereafter linked with the strong negative emotions that accompanied the actual event. EMDR is a technique to reprocess the traumatic memory while disconnecting it from the associated negative emotions and thoughts. EMDR contains elements of other therapies including psychodynamic, cognitive-behavioral (CBT), interpersonal, experiential, and body-centered therapies.

The key component in EMDR is the use of bilateral (two-sided) stimulation. The bilateral effect is provided by having the client visualize a distressing scene or memory while the therapist stimulates rapid back-and-forth eye movements, alternates right and left hand taps, or alternates sounds between the right and left ears. During the visualization, the client brings to mind thoughts and feelings related to the distressing memory (Rubin, 2003). The term EMDR comes from the idea that *eye movements* (or other bilateral stimulation) while *reprocessing* a traumatic memory can lead to *desensitization* of the anxiety associated with the memory. EMDR goals include anxiety reduction, elicitation of positive affect (emotion), changes in beliefs, insights, and behavioral shifts (Shapiro, 2002). A course of treatment may consist of 12 or more sessions over a period of several weeks, depending on the client's needs and response to treatment. EMDR is usually administered on an outpatient basis (Bisson et al., 2007).

Since Dr. Shapiro's (1989) first article on EMDR was published, over 30,000 mental health practitioners have been trained in EMDR. In the early 1990s, EMDR was depicted by the popular media and early proponents as a miracle cure for a wide range of problems. The dramatic results of early EMDR studies were misinterpreted as implying that a single EMDR session could lead to long-lasting resolution of distress associated with traumatic memories, traumatic stress disorder (PTSD) and that

clinicians could anticipate success rates as high as 80 or 90 percent. PTSD may occur after experiencing or witnessing military combat, domestic violence, sexual trauma, auto accidents, natural disasters, and other types of trauma. However, Shapiro acknowledged some of the media reports as hype and cautioned EMDR proponents not to make claims about miracle cures (Rubin, 2003).

EMDR has been used to treat many conditions, including PTSD, grief, eating disorders, phobias, panic disorder, test anxiety, performance difficulties (e.g., work, sports, performing arts), conduct disorders, personality disorders, chemical dependency, marital and relationship problems, dissociative disorders, and physical pain. The most compelling evidence exists for the effectiveness of EMDR in treating PTSD. Some extreme claims have contributed to the controversy and skepticism surrounding the use of EMDR. For example, Allan L. Botkin, PsyD, claims that an offshoot of EMDR he calls *induced after-death communication* can help resolve the deep sadness associated with grief by helping bereaved individuals "experience what they believe is actual spiritual contact with the deceased" (Botkin, 2000, p. 181).

Theories about the mechanism of action responsible for the effects of EMDR include resetting of cells in the brain's septum (which includes the hippocampus and amygdala), disconnection between the affective (emotion) and cognitive (thought) parts of the anterior cingulate cortex, and increase in the interaction between right and left brain hemispheres. Evidence from electroencephalogram (EEG) studies suggest that brain stimulation during EMDR increases the power of a naturally occurring low-frequency rhythm in the amygdyla of the brain, which processes fear. When fearful memories are recorded (encoded), the memory is closely linked to the fearful emotion experienced during the traumatic event. This low-frequency rhythm produced by EMDR stimulation causes a mechanical change in fear memory, allowing the memory to be disconnected from the extreme emotions previously associated with the traumatic memory (Harper, 2009).

There has been a great deal of controversy about the effectiveness of EMDR. In a 2007 review of the research into treatment of PTSD, EMDR was found to be as effective as trauma-focused CBT, both of which were more effective than stress management, other therapies, or no treatment. Results may be affected by the populations being studied. For example, a study of Vietnam vets with PTSD showed EMDR to be less effective than a control group receiving no treatment (Bisson et al., 2007). While EMDR appears to be a well-supported treatment for adults with PTSD resulting from a single trauma, there is less compelling evidence supporting the effectiveness of EMDR to treat PTSD in children, combat veterans, or individuals who have sustained multiple traumas (Rubin, 2003). As not all individuals will benefit from EMDR, a variety of treatment approaches should be considered. Other treatment options may include alternative forms of trauma-focused treatment (e.g., CBT or exposure therapy) or psychotherapy augmented with medication (Bisson, 2007; Rubin, 2003).

More research is needed to establish the effectiveness of EMDR as a treatment for various populations and conditions, to see whether beneficial effects are maintained over time, and to explore and document any negative outcomes or side effects. Side effects of EMDR may include unanticipated reactions, a temporary increase in distress (emotional or physical), or ongoing reexperiencing of traumatic material (e.g., in memories, dreams, or flashbacks) after the session.

See also amygdala, anterior cingulate cortex, anxiety, cognitive therapy and cognitive-behavioral therapy, electroencephalography, fear, posttraumatic stress disorder.

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F

Fabrication of Emotion

Following their cross-cultural research in the 1960s and 1970s, American psychologists Paul Ekman and Wallace Friesen wrote a classic book on facial expression of emotion, *Unmasking the Face* (Ekman & Friesen, 1975). Among the topics covered in their text was facial deceit. As they discussed, people may attempt to be deceptive in their facial expressions for a variety of reasons, for instance, to be polite, to lie for self-interest, to convey a certain self-image that is protective of self-esteem, or simply to conform with one's culture. They point out that it is more difficult to be deceptive with facial expressions than with words.

Ekman and Friesen specify four general rules that may help people to identify whether someone's facial expression is an attempt at deception. First, in general, they recommend looking at the eyes rather than other facial features (such as the mouth) for the truth. For instance, a false smile may include the movement of the same facial muscles in the mouth area as a "true" smile, but the facial muscles in the eye area may differ (with a false smile, there is often very little facial muscle movement in the eye area, whereas a happy person has "smiling eyes"). Second, they suggest a skeptical attitude if someone conveys emotions through words but shows no emotion through facial expression. Third, if an individual expresses one emotion with his words and a different one with his facial expression, it depends on the situation which to believe. Fourth, if an individual states that he feels no emotion but shows a facial expression of emotion, the facial expression more likely is conveying the true feeling. Ekman and Friesen emphasize that these rules are tentative.

Ekman and Friesen elaborate further in their book, suggesting additional ways to detect facial deceit and problems with detecting facial deceit. Ekman (2007, 2009) has written additional books in which he updated research on facial expression and emotion, including facial deceit. He also briefly describes deceit conveyed through body movement and other nonverbal cues.

See also display rules, Paul Ekman, facial expression, nonverbal expression, smiling.

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Lie to Me is an American television series featuring a character (Dr. Cal Lightman) loosely based on Paul Ekman, psychologist and expert on body language and facial expressions. In the TV show, Dr. Lightman and his colleagues assist in investigations (usually from law enforcement), reaching the truth through applied psychology: interpreting microexpressions—through the Facial Action Coding System—and body language.

Facial Action Coding System

The Facial Action Coding System (FACS) was developed by American psychologists Paul Ekman and Wallace Friesen in the 1970s as a system to categorize and classify facial expressions. The FACS manual describes how muscular action in the face, either single muscles or combinations of muscles, changes how the face appears (Ekman & Friesen, 1978). This information is used by psychologists and other behavioral scientists, animators, computer scientists, and others to aid in their professional work. The most basic use of FACS is to identify the possible expressions that the human face can have and which muscles produce particular expressions.

Ekman and Friesen, emotion researchers, have also created a system for aiding in the identification of emotions using FACS called EM-FACS (Emotion-FACS; Ekman & Friesen, 1984). For instance, when people are afraid, they often open their eyes wide, showing the sclera (white) above the iris; lift and knit their eyebrows together; and open their mouths slightly, with tense lips. A number of emotion experts (e.g., Matsumoto, Keltner, Shiota, O'Sullivan, & Frank, 2008) are in agreement that particular facial expressions are reliably associated with experiencing particular emotions. Anger, disgust, fear, happiness, sadness, and surprise are universally associated with specific facial actions. However, some emotions (e.g., embarrassment, shame, love) have not been studied sufficiently.

Utilizing FACS or EM-FACS to identify emotions can be helpful in research on emotion, in psychotherapy, in [illegible] mental disorders, in lie detection, and possibly in other applications (E[illegible]n & Rosenberg, [illegible]). The actual practice of

coding emotions using FACS or EM-FACS has its limitations, however. First, people can attempt to conceal their emotions, and the concealment can affect at least part of the emotional expression. Second, coding emotions is very technical and time consuming. People often reveal emotional facial expressions for very brief periods of time, often only about two seconds. In research, therefore, people's faces should be videotaped so that researchers may take the necessary time to detect the emotions, reviewing the videotape repeatedly. Additionally, coding facial expression of emotion requires a significant amount of training.

FACS is a commonly used system. Ekman and Friesen, along with new collaborator Joseph Hager, published a revised FACS in 2002 (Hager, Ekman, & Friesen, 2002). Innovative uses have appeared in the early 2000s, including a FACS for chimpanzees (Parr, Waller, Vick, & Bard, 2007).

See also Paul Ekman, fabrication of emotion, facial expression, universal signals.

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Facial Expression

Over 100 years ago, in his classic book *The Expression of the Emotions in Man and Animals*, Charles Darwin (1872/1998) described and illustrated his and others' observations of emotional expressions in humans and animals, demonstrating some similarities between expressions of humans and expressions of some animals. For example, he described and graphically represented that a threatened dog or cat displays a snarling expression that looks similar to the angry expression of a human. As another example, he presented drawings of the *Cynopithecus niger* (a type of monkey) in a "placid" condition, during which it is expressionless, and immediately after being caressed. In the latter expression, the monkey appears to be smiling, and its face looks similar to the face of a happy person. Darwin argued that the existence of these similarities demonstrates that emotional expression must have evolved through natural selection in the same way that other characteristics evolved. He further contended that the expressions must serve a function; they enhance survival of the organism. Additionally, his observations suggest that emotions exist as distinct categories (e.g., happiness, anger, sadness, fear) because specific facial and other expressions are associated with these specific emotional states.

Darwin's book includes descriptions, drawings, and photographs of facial, body posture, and other types of emotional expressions in several species, including domestic dogs, domestic cats, several monkey species, several bird species, and humans. Darwin described expressions associated with several emotions, including sadness, anger, high spirits, contempt, disgust, fear, and surprise.

Examples of the effect eyebrows have on facial expression. From Charles Darwin's *The Expression of the Emotions in Man and Animals,* 1872. London: John Murray, 1872.

Darwin reasoned that if facial expressions are similar across species, they should be highly similar in humans in cultures throughout the world. During his time, with the limitations of poor and expensive photography, difficulty with travel, and relatively unsophisticated research methods, Darwin was not able to adequately test his hypothesis across cultures. However, about a hundred years later, a few researchers began to do so. In the 1970s, Austrian biologist Irenaus Eibl-Eibesfeldt (1973) visited a wide variety of cultures, including remote ones, taking photos of people's facial expressions. According to his observations and photos, people's facial expressions across cultures are very similar. Beginning in the 1960s and continuing through the 1970s and 1980s, American psychologist Paul Ekman and colleagues studied facial expressions in humans across cultures, using more modern and sophisticated research methodology. His basic approach was to take photographs of people displaying facial expressions of various emotions—he chose anger, disgust, fear, happiness, sadness, and surprise. He and his colleagues then presented the photos to individuals in a wide variety of cultures, including some where the residents had never met people from the Western world. The researchers asked the participants to engage in a matching task: identify which face goes with which of the six emotions. (In many cultures, the research involved utilizing translators.) These studies indicate a high amount of similarity in interpreting facial expressions across cultures (see Ekman & Friesen, 1975).

Ekman and Friesen's 1975 book *Unmasking the Face* describes in detail the movements of facial muscles that are associated with specific emotions. The book is also filled with photographs illustrating the descriptions. In the 1970s Ekman and Friesen also developed an assessment system, the Facial Action Coding System (FACS), for categorizing and classifying facial expressions based on how muscular action in

the face affects the appearance of the face. The system is used by psychologists and other behavioral scientists, computer scientists, animators, and others.

Many emotion experts (e.g., Matsumoto, Keltner, Shiota, O'Sullivan, & Frank, 2008) are in agreement that across cultures, particular facial expressions are generally associated with experiencing particular emotions, at least in regard to some emotions (e.g., happiness, sadness, anger). Because of the cross-cultural research described earlier, along with a large body of other research, Matsumoto et al. (2008) also accept Darwin's original evolutionist claims, which include that emotional expression evolved through natural selection, that emotional expression has some function, and that at least some emotions exist as distinct categories.

See also animals, basic emotions, body language, Charles Darwin, display rules, Paul Ekman, Facial Action Coding System, nonverbal expression, universal signals, vocal expression.

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Family

A family is a group of people who are affiliated or related (by blood or marriage). Many theories about emotion and interpersonal relationships cite the importance of early childhood experiences, including behaviors and dynamics modeled within one's family of origin. The *family of origin* is the family into which an individual was born (or adopted). British psychiatrist John Bowlby proposed that attachment—the early bond between a baby and its primary caregiver (parents and others who care for the baby)—sets the stage for future emotional relationships, especially intimate relationships (Fraley & Shaver, 2000). Unhealthy relationships may exist in dysfunctional families in which conflict or abuse (e.g., domestic violence) occurs regularly. Codependency, often seen in dysfunctional families, describes a pattern of detrimental behavioral interactions. In codependent relationships, one person's behavior leads to a reaction, or accommodation, by other people within the relationship.

A family's ability to resolve conflict depends on communication skills and *family schemas*—ingrained beliefs about family functioning and individuals' roles within the family. Family schemas include a set of shared beliefs about interrelationships between family members, division of labor, standards for dealing with conflict,

boundaries, privacy, and how to deal with individuals outside the family unit. Family members influence each other's emotions, thoughts, and behaviors. Family schemas shape family dynamics (interaction patterns) and influence the ways in which family members learn to manage and express emotions (Dattilio, 2005). Dynamics in an individual's family of origin influence future relationships. People who grow up in dysfunctional families may repeat detrimental behavior patterns in future relationships.

Parenting practices and styles are important to the development of self-esteem in children. In a study looking at construction of family narratives (stories), it was found that a higher level of mothers telling stories about positive and negative emotions was related to the development of positive self-esteem in preadolescent children (both sons and daughters; Bohanek, Mann, & Fivush, 2008).

Children learn about emotional regulation—how to manage their emotions—by observing, especially modeling of behavior by parents and other family members. Emotional regulation is affected by the emotional climate in the family, including parenting style, the parents' relationship, and the level of emotional expression within the family (Sheffield Morris, Silk, Steinberg, Myers, & Robinson, 2007). For example, when parents often display anger toward children in frustrating situations, children are not likely to learn effective ways to regulate their own emotions or socially appropriate ways to respond to frustration. Children exposed to a high level of negative emotion within the family (e.g., when a mother suffers from depression) may have less effective coping strategies to deal with negative emotions. Parenting practices that influence a child's ability to regulate emotion include emotion coaching and emotion dismissal. *Emotion coaching* occurs when parents are attuned to their child's emotions, see emotions as opportunities for intimacy or teaching, help the child to verbally label his or her emotions, empathize, and help the child problem solve. Emotion dismissal occurs when parents are uncomfortable with a child's emotion and discourage expression of emotion. Parenting practices that are punitive or dismissive of emotions tend to promote inappropriate emotional regulation abilities in children, while emotion coaching promotes positive emotional regulation strategies (Sheffield Morris et al., 2007).

See also attachment, emotional expression, family therapy, regulation of emotion, relationships, self-esteem.

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Family Therapy

Early forms of psychotherapy, such as Freud's psychoanalysis and Carl Rogers's client-centered therapy, were based on the idea that psychological problems arise from unhealthy interactions with others. Freud maintained that neurotic conflicts were spawned in the family, and the best way to undo these influences was to treat the patient in private, away from the family's influence. Likewise, Carl Rogers believed that problems stemmed from early family interactions and cravings for parental approval. Rogers practiced individual therapy in private, where the therapist could provide unconditional acceptance to help guide the client on the road to self-actualization (Nichols, 2008).

Marriage and family counseling in the United States originated in the 1940s and 1950s, with major expansion in the late 1970s and early 1980s. The popularity of marriage and family counseling increased because of several factors. After World War II, there was a sharp increase in the divorce rate, occurring simultaneously with the beginning of the baby boom in 1946. It was also related to the changing role of women. After World War II, more women sought employment outside the home. The role of women continued to change with the rise of the women's rights movement in the 1960s. The increase in the life span meant that couples found themselves living with their partners longer than at any previous time in history. All these factors set the stage for researchers and practitioners to find new ways to work with couples and families (Gladding, 2004).

In 1958, New York psychoanalyst Nathan Ackerman treated families using psychoanalytic technique. Ackerman's work led to newfound respect for family therapy in the field of psychiatry (Gladding, 2004). American psychologist Jay Haley, a dominant figure among early family therapists, blended his ideas with those of American psychiatrist Milton Erickson, who practiced hypnotherapy. Haley played a major role in the development of strategic family therapy, and his work influenced structural family therapy. In the late 1950s, groups of researchers led by Gregory Bateson (Palo Alto, California) and Murray Bowen and Lyman Wynne (at the National Institute of Mental Health) explored how couples and families functioned when a family member was diagnosed with schizophrenia. The Bateson group came up with concepts such as the double bind: when a person receives two contradictory messages and is unable to follow both, she develops psychological and physical symptoms as a way to escape the situation and reduce tension (Gladding, 2004). Bowen developed a systemic treatment approach and a clinical tool known as the *genogram.* The genogram, still popular today, is a multigenerational visual representation of one's family used to examine family patterns and roles. In the late 1970s, Bowen introduced ideas such as enmeshment and triangulation. *Enmeshment* refers to environments in which family members are overly dependent or involved with one another. *Triangulation* describes situations in which a person is pulled in two different directions by other family members.

In the 1970s, Argentinean therapist Salvador Minuchin originated structural family therapy, and Italian psychiatrist Mara Selvini Palazzoli created a form of strategic

family therapy known as the Milan Approach. In the 1970s and 1980s, American psychotherapists Steve deShazer and Bill O'Hanlon developed brief solution-focused approaches to family therapy. In the 1990s, Australian social worker Michael White and David Epston, a therapist from New Zealand, founded narrative family therapy (Nichols, 2008). In 1996, American social worker Monica McGoldrick emphasized the importance of multicultural factors and cultural background in treating families (Gladding, 2004).

The group therapy movement of the 1960s influenced the ongoing development of family therapy. There are similar theoretical underpinnings in group and family therapy. Both groups and families focus on problem behaviors, influences between people and the environment, and the influences of family on individual behavior. However, because a family has a shared history and multigenerational influences, family work calls for different techniques than working with a group of unrelated individuals. Families are also different because of family roles, multiple complex relationships within families, and differences in status and power within a family. Two concepts of group dynamics that are important to family therapy have to do with communication and role theory. It is important to make a distinction between the *content* (what is said) and the *process* (how it is communicated) of communication. Family members fulfill roles that influence each other. For example, if one child plays the role of the rebel, another child may fill the role of the hero, the good child, or the peacemaker. Family roles influence each other to maintain a balanced system (homeostasis), making behaviors more resistant to change.

Families often present for therapy with one member identified as having or causing the problems (the *identified patient*). However, most family therapists work with the entire family system, focusing on the family structure, dynamics, and relationships. Family systems therapists focus on many concepts, including family interactions, patterns, rules, myths, communication, homeostasis (maintaining a state of equilibrium until forced to change), and adaptability.

Family therapy is used to contend with issues such as unemployment, poor school performance, spousal abuse, depression, rebellion, and self-concept (Gladding, 2004). Research shows that family counseling interventions are as effective as individual interventions for most client complaints and may lead to more enduring changes. Some forms of family therapy (e.g., structural-strategic family therapy with substance abusers) are more effective in treating problems than other approaches. The presence of all family members in therapy may improve the chances of successful outcomes. Overall, there is high client satisfaction from those who receive marital and family counseling services (Gladding, 2004).

Individual therapy and family therapy both have their place. To determine which treatment modality (e.g., individual or family therapy) is most appropriate, it is important to assess each case and situation on its own terms. Factors to be considered include the developmental stage of the family, cultural and gender issues, other mental health problems of family members (including substance abuse or dependence), and potential for abuse or domestic violence.

Professional organizations such as the American Association for Marriage and Family Therapy, founded in 1942, have developed professional standards and guidelines for training and credentialing marriage and family therapists.

See also American Association for Marriage and Family Therapy, couples therapy, group therapy, hypnotherapy.

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Allyn and Bacon Family Therapy Web site: http://www.abacon.com/famtherapy/

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Fear

Fear is omnipresent and is one of the emotions about which we have the most knowledge. It may be a functional reaction, leading to life-saving behavior, or dysfunctional, as in experiencing a phobia. Fear is seen in all mammal species and often looks highly similar from one animal to the next.

Fear is experienced as unpleasant. Behaviorally, there may be an immediate freezing, in which the individual becomes very still and quiet, or a startle reflex could occur, involving a jerking of much of the body and possibly jumping, or a more limited response such as eye blinking, or something in between. During this immediate reaction, the fearful person or animal is vigilant, attending closely to the potential danger. Thus, perceptually, fear is seen as a narrowing or focusing of attention toward a certain object or situation.

Physiologically, fear is an activation of the sympathetic nervous system, preparing the animal to fight or flee. Heart rate, blood pressure, and respiration all increase, stress hormones are released, energy is mobilized, and a number of other changes occur in the body. In the brain, it is clear that at least one structure, the amygdala (an almond-shaped area in the interior of the brain) is involved in fear. For instance, LeDoux (1996) discusses how the amygdala receives sensory information from another brain structure, the thalamus, and begins to initiate fear responses (e.g., increased heart rate). Additionally, as a number of researchers have shown, damage to the amygdala can render an animal unable to learn new fears through conditioning (e.g., Schafe et al., 2000). Particular brain chemicals, such as the chemical messenger GABA (gamma-aminobutyric acid), which inhibits the firing of neurons, are involved in fear. LeDoux (1996) and Kalat and Shiota (2007) discuss physiological, neuroanatomical, and neurochemical aspects of fear.

Many researchers distinguish fear from a related emotion: anxiety. Both emotions involve a perceived threat. With both, the reaction itself includes a subjective experience that is unpleasant and a physiological response. The two emotions differ in a few ways. First, fear involves a clear stimulus: something potentially threatening happened, and the individual is reacting with a fear response. Anxiety is more general and diffuse. When someone is anxious, there is a dread about something that could happen or that is about to happen, or the person may not even know the source of the anxiety. Second, and related to the first point, as Epstein (1972) described in his classic chapter, fear is associated with coping, whereas anxiety means a failure in ability to cope. Epstein described fear as an "avoidance motive." The individual may fight or flee, unless there is some impediment to these actions, and the fear can be resolved. With anxiety, threat is perceived but the arousal is "undirected," and avoidance or defensive reactions do not clearly resolve the emotion. Third, fear and anxiety have overlapping but somewhat different physiological reactions and

somewhat different physiological mechanisms. The experience of fear involves an acute fear response (e.g., increased heart rate) when an eliciting stimulus is present. People who experience anxiety have relatively high resting sympathetic nervous system activity but may react less intensely to acute stressors (Hoehn-Saric & McLeod, 2000). Additionally, while the amygdala is clearly involved in fear, the stria terminalis (a different brain area) may be more directly involved in anxiety (see Walker, Toufexis, & Davis, 2003).

Distinguishing between fear and anxiety is helpful for a number of reasons, including that the distinction aids in the understanding of the variety of anxiety disorders. On the basis of the behavioral and physiological responses associated with them, specific phobias—for which a clear stimulus is present (i.e., dog phobia, water phobia, claustrophobia)—are fears. Generalized anxiety disorder and panic disorder more closely resemble anxiety. Posttraumatic stress disorder and social phobias have elements of both fear and anxiety. The ongoing research on fear and anxiety is likely to lead to a better understanding of these experiences and perhaps more effective treatments for the anxiety disorders.

See also amygdala, anxiety, generalized anxiety disorder, panic disorder, phobia, posttraumatic stress disorder, sensation-seeking and risk-taking, sympathetic nervous system.

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While fear is generally considered unpleasant, some people seek a temporary thrill in things that are scary (e.g., roller coasters, horror movies). These things may cause some degree of fear, but people generally do not perceive them as actual threats to life or limb. There are people who get hooked on the adrenaline rush associated with risk-taking.

Feeling

A feeling is a form of awareness, sometimes called an *element of consciousness.* A common topic of study and thought among early psychologists (late 19th and early 20th centuries) was the nature of consciousness. Some psychologists, called *structuralists* (e.g., Titchener, 1908; Wundt, 1902), were interested in describing and studying the structure of consciousness. It was these psychologists who clearly defined the concept *feeling.*

Feelings are the elements of consciousness that are affective or emotional. Other elements of consciousness include thoughts, memory images, and sensations, including touch, warmth, body sensations, and others. An element of consciousness means that that particular mental quality is irreducible or not further dividable or dissectible. Feelings therefore differ from other affective qualities, such as emotions and moods, in that feelings are less complex.

See also affect, Cannon-Bard theory of emotion, James-Lange theory of emotion, mood, subjective experience of emotion.

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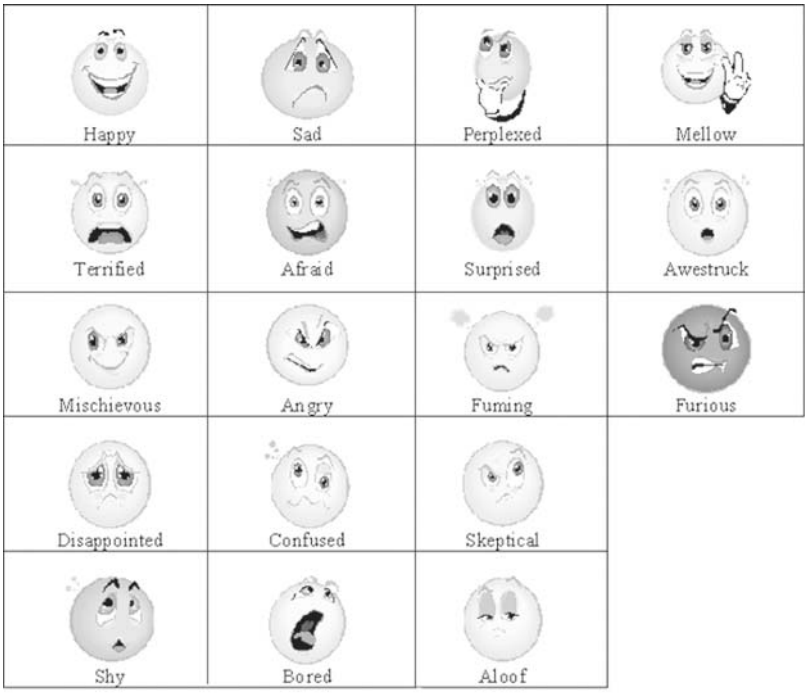
Feelings Chart

A feelings chart is a series of drawings (or pictures) of faces depicting different facial expressions. Sometimes the faces are labeled with the names of different moods (e.g., happy, sad, worried, angry, bored). A feelings chart may help people to put a name to what they are feeling. This can be useful for people who do not know how to identify emotions they are feeling or for those who do not readily have names for feelings at their disposal.

Alexithymia is a term that literally means "without words for emotions." Alexithymia may be a personality characteristic, cognitive language style, emotional information processing deficit, or deficit in affect regulation. Individuals with autistic spectrum disorder or schizophrenia may have difficulty identifying what they are feeling or putting a name to feelings. Alexithymia has been associated with aphasia (loss of ability to speak or understand speech), traumatic brain injury, Parkinson's disease, depression, posttraumatic stress disorder, dysphoria (feeling unwell or unhappy), substance abuse, eating disorders, and panic disorder. A feelings chart can provide a means for people to develop a vocabulary to describe their moods or feelings.

There are different feelings charts for children and adults. Generally, children's mood charts have pictures of facial expressions that are simpler; they may resemble cartoon faces. Emoticons are representations of emotions in cartoon or stylized forms. Emoticons may be used in text or e-mail messages. Feelings charts may consist of a series of emoticons. Children's charts may have fewer and simpler names for moods. There are different feelings charts for different age groups of children to coincide with developmentally appropriate feelings vocabularies.



A feelings chart may help people to put a name to what they are feeling. This can be useful for people who don't know how to identify emotions they are feeling, or for those who don't readily have names for feelings at their disposal. (Courtesy of Yvette Malamud Ozer)

The term *mood chart* may also refer to a mood diary or a means of monitoring and recording moods by day or time of day. This may be a useful tool as part of a program of cognitive-behavioral therapy.

See also alexithymia, autistic spectrum disorders, cognitive therapy and cognitive-behavioral therapy, emoticons.

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Flow

Flow is the mental and emotional state of full involvement in an activity or experience. Across the ages and across cultures, artists, athletes, and ordinary people have described this sensation of deeply enjoyable absorption, a feeling that everything is "working just right." In the 1960s, psychologist Mihaly Csikszentmihalyi became fascinated with the creative process, including the experience that artists reported of becoming lost in their work. In his research, Csikszentmihalyi found that some artists described becoming so engaged with what they would work for days, weeks, or even months, paying little attention to needs for food or sleep. The knowledge that

Csikszentmihalyi has gained and shared about flow is the result of over 30 years of study and interviews with thousands of people.

Flow may occur during many activities, both work and play, including reading for pleasure, religious rituals, in the workplace, being with one's family, classroom teaching, using a computer, driving a car, studying, and many others (for references, see Compton, 2005). Athletes have mentioned this experience for years, referring to it as being "in the zone."

Nakamura and Csikszentmihalyi (2002) identified six characteristics of the flow state:

- intense focus on the activity at hand
- merging of action and awareness (individual feels "inside" the experience; person does not feel like an observer but rather like she and the experience are inseparable)
- loss of self-consciousness
- feeling that one is in control of one's actions and can handle future challenges regarding the experience
- a loss of sense of time (time seems either to move in slow motion or to "fly")
- a feeling of intrinsic reward in the situation; experience is done for its own sake rather than for an external reward

They also specified two conditions that are nearly always necessary (but not sufficient) for the flow state: (1) the activity is optimally challenging—an unchallenging activity results in boredom; if too challenging, anxiety results—and (2) the activity involves clear goals and immediate feedback. For instance, during rock climbing, an individual has a clear goal of reaching a certain point (i.e., the peak) and clear proximal goals (i.e., reaching the next ledge). He is also receiving immediate feedback of a sort. He achieves the proximal goal or fumbles.

Csikszentmihalyi and others have applied their knowledge to help others to achieve a state of flow in daily life. Examples of ways to foster flow include (1) discovering activities and environments that will nurture the flow experience for a particular individual and (2) identifying one's own personal characteristics that are conducive to flow. This may involve the development of characteristics that are not yet fully mature in the individual.

The study of flow has now been subsumed under the general field of positive psychology (the scientific study of human strengths and virtues). Csikszentmihalyi is one of the leaders and most productive researchers in positive psychology. Flow is a prototypical topic for positive psychology as it is recognized as an optimal experience for which to strive.

See also positive psychology.

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Viktor Frankl (1905–1997)

Viktor Frankl was born in Vienna, Austria. His father was director at the Social Affairs Ministry in Vienna. As a high school student, Frankl was active in Socialist student organizations and became interested in psychology. He earned both doctor of medicine and doctor of philosophy degrees from the University of Vienna. From 1940 to 1942, he was director of the Neurological Department of the Rothschild Hospital.

In 1942, Frankl, his parents, siblings, and his wife were captured by Nazi soldiers. For three years, Frankl lived in four concentration camps, including Auschwitz and Dachau. He and one sister were the only members of his family to survive the concentration camps.

After the war, beginning in 1945, Frankl was head physician of the neurological department at the Vienna Polyclinic Hospital. He also worked as a professor of both neurology and psychiatry at the University of Vienna Medical School. During this time, he wrote an account of his experiences in the concentration camps. He introduced his approach to psychotherapy—and to life—in his book *Man's Search for Meaning* (1962), originally published under the title *From Death-Camp to Existentialism* (1946). The book describes his horrific experiences, but Frankl manages to offer an inspiring tale. As he states early in the book, other people can take almost everything away from us—all our possessions, our loved ones, the clothes off our backs—but there is one thing we can maintain control over: our attitudes toward life. Therefore Frankl speaks of the horrors of starvation and of witnessing murder, intertwined with moments of pleasure: enjoying a beautiful sunset, sharing precious food with a colleague, observing the kindness of one person toward another. Frankl argues that he found meaning in these experiences and that this ability helped to save his life. *Man's Search for Meaning* (Frankl, 1962) has sold over 12 million copies.

The approach to therapy that Frankl introduced in *Man's Search for Meaning* and his other early writings is logotherapy, often called the "third Viennese school of psychotherapy" (the first is Freud's psychoanalysis and the second is Adler's individual psychology). In brief, the fundamental principle of logotherapy is that we humans are engaged in a search for meaning—this is our primary motivation. Meaning is created by the individual. Frankl's theory allows for free will, which is a concept denied in many earlier approaches to personality and to psychotherapy.

Frankl wrote 32 books and was awarded many honors, both during his lifetime and posthumously. He was awarded 29 honorary doctorates from universities throughout the world. His honors include the Oscar Pfsiter Award of the American Psychiatric Association, the Great Cross of Merit with Star (from Germany), the Lifetime Achievement Award of the Foundation for Hospice and Homecare, and a nomination for the Nobel Peace Prize, among many others.

He was widowed during the war and married Eleonore Schwindt in 1947. They had a daughter, Gabrielle, who had two children. Frankl was an avid climber: three difficult climbs on the Peilstein and Rax mountains were named after him. Frankl died in Vienna of heart failure at age 92.

See also humanistic psychotherapy, logotherapy.

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Anna Freud (1895–1982)

Anna Freud, daughter of Jewish psychoanalyst Sigmund Freud, is best known for her contributions to child psychology and psychotherapy and for her elaboration of her father's descriptions of psychological defense mechanisms. Anna Freud was born in 1895 in Vienna, Austria. She was the sixth and youngest child of Sigmund and Martha Freud. She grew up in the Freud household while her father and his colleagues were developing psychoanalysis; Sigmund Freud's first book, *Studies on Hysteria,* was published in the year that Anna was born. Although Anna received no formal higher education, she became involved in psychoanalysis by attending meetings of the Vienna Psychoanalytic Society beginning in 1918, when she was 23. Within two years, she had become the secretary. She received both official training in psychoanalysis and underwent the psychoanalysis (intensive psychotherapy) that was required to become a psychoanalyst. Her psychoanalyst was her father. During her lifetime she published more than 100 scholarly papers and several books.

Although Freud never married or had children, she was fascinated by children and desired to help them. Most of her career was devoted to developing a new method for treating psychological problems in children. Another follower of Sigmund Freud, Melanie Klein, had created a treatment for children that closely resembled psychoanalytic (Freudian) therapy for adults. Anna Freud believed that such an approach to children was inadequate. Through her observations of children that began with working as a teacher, she produced what came to be known as the *Continental approach* to child psychoanalysis (contrasted with Klein's *British approach,* so named despite the fact that Klein was Austrian). Freud's new approach involved a fairly extensive preparatory phase that was intended to engage the child. During this phase the therapist would demonstrate her usefulness to the child, then establish power of the therapist and reveal the child's vulnerability. Freud's primary techniques were interpretation of the child's fantasies and dreams and interpretation of the relationship between child and therapist. Freud also created an elaborate method, called a "metapsychological profile," which organized information about the child and produced a diagnosis. Sollod, Wilson, and Monte (2009) describe Freud's contributions to psychological assessment and treatment of children.

Freud is also well known for her elaboration of her father's discussion of ego defense mechanisms, which include repression, denial, projection, displacement, reaction formation, sublimation, regression, and others. In all, Freud described 15 defenses in her classic book published in 1936, *The Ego and Its Mechanisms of Defense.* Ten of these had been either discussed or suggested by her father, and five were ideas of her own. Defense mechanisms remain among the most well-respected and well-supported of Freudian concepts today. Recently, Cramer (2006) and Cramer and Davidson (1998) have reviewed defense mechanisms, discussing research, suggesting areas of further research, and identifying situations in which particular defense mechanisms may be helpful or harmful.

Freud engaged in philanthropic and activist [illegible] to benefit child welfare. In the 1940s she sought funding to open and staff a collection of child[illegible] centers which would house children in safe locations. [illegible] children were

separated from their parents during World War II because their parents lived and worked in areas that were considered relatively unsafe. Her efforts were successful, and the Hampstead Nurseries were established. In 1945, a group of six young children who had had a very unusual experience—they were held as infants in a German concentration camp together, as a small group without their parents—arrived at one of the Hampstead Nurseries. Freud and nurse Sophie Dann (1951) wrote an account of their behavior at the nursery. They showed uncommon, even fierce, loyalty to one another and acted out against adults in particularly aggressive and regressive ways (e.g., biting, spitting, urinating on the floor). Freud also worked toward securing legal rights for children. For instance, she argued that children should have legal counsel in cases of divorce and adoption. Many of her ideas are presented in the book that she wrote with two colleagues from Yale University (Freud, Goldstein, & Solnit, 1973).

Freud was instrumental in further developing and popularizing many of her famous father's ideas. She also made significant contributions of her own. In her personal life, Freud was passionately devoted to her father. During his last 16 years of life, he suffered from jaw cancer, and Anna became his primary caretaker, accompanying him to Paris for radium treatments and Berlin for surgeries. She also worked as a secretary and professional assistant, typing his correspondence and delivering his papers to audiences when he was unable to speak. In 1938, when Anna was 43, the Freuds (Anna's parents and siblings) were compelled to leave Austria to save their lives; German Nazis had occupied Austria a few years earlier. They settled in London, and Sigmund died the following year. After Sigmund's death, Anna's life was largely devoted to her work, including care for the children and adults in her psychotherapy practice. She had many friendships. In the 1970s, Anna began to have serious medical problems. In 1982 she suffered a stroke to the cerebellum. Anna Freud died later that year, in London, at age 87.

See also defense mechanisms, Sigmund Freud, psychoanalytic perspective, psychodynamic therapy and psychoanalysis.

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Sigmund Freud (1856–1939)

Sigismund (Sigmund) Schlomo Freud was born in 1856 in Freiberg, Moravia, which is now part of the Czech Republic. His father, [illegible], was a wool merchant,

and his mother, Amalie, 20 years Jakob's junior, raised the children and kept house. Freud had two half brothers from an earlier marriage of Jakob's and seven full siblings; Freud was the first-born of Amalie. The Freud family was Jewish.

When Freud was a small child, his father lost his business and the family moved, soon settling in Vienna, Austria. The family lived in poverty in a part of Vienna in which other poor Jews lived. Freud's parents viewed Sigmund as intellectually gifted and encouraged and supported his studying, which Freud did passionately, even as a young child. He did outstandingly well throughout his school years; before he entered higher education, he was proficient in German, English, French, Italian, Spanish, Hebrew, Latin, and Greek (Jones, 1953). His desire was to become a research scientist; however, he chose a medical education because research science was largely unavailable to Jews. He entered medical school at the University of Vienna in 1874 and completed his MD in 1881. Within medicine he quickly developed an interest in treating and studying psychological ills and was relatively uninterested in purely physical ailments.

After he graduated, Freud began work in neurology at the Vienna General Hospital, where he soon became an expert at diagnosing brain damage and disease. His move toward psychotherapy began when he met a doctor 14 years his senior, Josef Breuer. Breuer had already begun treating a few patients with psychological problems through both hypnosis and the new treatment that he and a few others were developing: the talking cure, the beginnings of psychotherapy. Freud and Breuer

Portrait of Austrian Sigmund Freud, the father of psychoanalysis and one of the most influential thinkers of the modern world. (Library of Congress)

discussed their patients with one another. Within a few years Freud followed Breuer's lead and opened a private practice in his home, specializing in neurological and brain disorders and receiving referrals from Breuer's overstock of patients with psychological problems.

Freud was fascinated by the puzzles of the psychological conditions that his patients presented and spent long hours trying to make sense of them. In 1895, he began publishing; his first publication, *Studies on Hysteria,* coauthored with Breuer, described six cases (Breuer & Freud, 1895/1955). In this early book, Freud already emphasized the importance of the unconscious mind in regard to psychological suffering, and Freud and Breuer initiated a description of psychotherapy techniques.

As he was establishing his career, Freud was also developing a personal life. In the early 1880s he had met and fallen in love with Martha Bernays, granddaughter of the chief rabbi in Hamburg, Germany. Freud did not yet have money to marry, but he worked hard and carried on a long-distance love affair, writing hundreds of romantic letters to Martha during their courtship. In 1886 they married. Over the next several years they had six children, including Freud's most famous child, Anna, who further developed Freud's theory of psychoanalysis.

From the late 1890s through the early 1920s Freud treated scores of psychotherapy patients in his home office. He thought carefully about the therapy sessions, taking copious notes and working on their cases long into the night. He published extensively during this period on many topics: the unconscious mind, human motivation, human sexuality, the meaning of dreams, the development of personality (which Freud said was determined by childhood experience), the structure of personality, psychotherapy technique, and the causes of many mental disorders (including obsessive-compulsive disorder, depression, schizophrenia, and others). He had professional relationships of interest, many with other famous psychologists such as Carl Jung, Alfred Adler, and Erik Erikson. Some of his relationships were highly emotional, even stormy, and several ended in acrimony. He had adventures and misadventures in other areas of life, including his connections to cocaine. Freud used cocaine regularly in the late 1800s but apparently never became addicted. However, he prescribed it to a close friend who later died from his addiction; Freud was deeply injured by his friend's demise. In the early 1900s, Freud had become famous in some circles throughout Europe, and he even gained the attention of Americans. In 1909 he was invited to speak at Clark University in Massachusetts. Afterward, Freudian psychology continued to gain popularity in the United States.

Freud was addicted to smoking cigars, and his habit eventually caught up with him. In 1923, at age 67, he was diagnosed with cancer of the jaw. His treatments lasted over many years, involving several surgeries and eventually resulting in a prosthetic jaw that had to be removed and cleaned daily. His cancer was life altering: the once extraverted Freud now had trouble talking and eating, and once the cancer progressed, he became more withdrawn. During the same period of time, between the two world wars, anti-Semitism was on the rise. In 1933, the Nazis took control of Germany. They burned the books of all prominent Jewish authors, including Freud. In 1938, the Nazis annexed Austria, and they soon paid visits to Freud and his family. Many in the international community feared for Freud's safety, but Freud initially saw no reason to leave Vienna. Fortunately, he eventually saw the danger, and in 1938, he, Martha, and the children were safely escorted to London. Freud's

surviving siblings were not so fortunate, and all died in concentration camps. By this point Freud was quite ill with his jaw cancer, which was no longer operable. In September 1939, he died of a lethal dose of morphine. Freud was 83 years old.

Freud is considered by many to be one of a few people whose ideas most influenced the Western world in the twentieth century. Although he was not the first great thinker to emphasize the importance of the unconscious mind, his graphic and engaging descriptions of the power of the unconscious inspired others to respond with arguments supporting or criticizing his ideas. He was a pioneer in description of the function of psychotherapy and how it should be conducted. He emphasized the importance of childhood in shaping our adult personality characteristics. He argued that our minds are naturally in conflict, torn by incompatible motives of different parts of the self. He openly discussed sexuality and its relation to psychological distress. These are many, but not all, of the important achievements that Freud brought to psychology. During his lifetime, Freud did not receive the type of award for scientific contribution that he desired. However, he was honored with a prestigious award for literature in 1930: the Goethe Prize. Freud's writings fill 23 volumes. Historian Peter Gay has excerpted, edited, and annotated Freud's work in a single volume, *The Freud Reader,* which is a good introduction to Freud. Some degree of controversy surrounds aspects of Freud's life. For instance, Masson (1984) claims that Freud dishonestly presented information from some of his patients who reported childhood sexual abuse (Freud later explained their reports as fantasizing). Some rumors exist that Freud may have had a sexual relationship with his sister-in-law, Martha's sister. Other highly personal idiosyncratic characteristics are well known, such as Freud's inferiority feelings due to his Jewish heritage and his extreme travel phobia. Volumes of biographical material are available on Freud.

See also ambivalence, catharsis, defense mechanisms, Anna Freud, Karen Horney, libido, personality, projective tests, psychoanalytic perspective, psychodynamic therapy and psychoanalysis, Rorschach Psychodiagnostic Technique, the unconscious mind.

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Friendship

Friendships play an important role in people's emotional lives. People across the life cycle report that they are happier when they are with friends than when they are alone or with family (Larson & Bradney, 1988). Friendships provide a variety of benefits; it is these benefits that create conditions which allow for great joy and happiness.

According to deVries (1996), the provisions of friendships can be summarized into three broad categories: affective (emotional), communal, and sociable. In the affective realm, one's friends convey warmth, caring, acceptance, and appreciation. In many friendships, people feel free to share their innermost thoughts and feelings. Friends also empathize, provide encouragement, and boost an individual's self-concept. As a result of these affective characteristics of friendships, trust, loyalty, and commitment exist among friends. Friendships also provide a feeling of communality. People who are friends share some similarities, helping each friend to feel connected to humanity. Additionally, friends engage in activities together and give and receive support in tangible forms (e.g., loaning items to one another, giving rides to one another, etc.). Last, friends are sociable with one another. Friends have fun together, talking, laughing, and sharing in recreational activities.

Friendships offer similar benefits for the two sexes and across the life cycle, although some sex and age differences do exist. Felmlee and Muraco (2009) conducted research on sex comparisons in friendship norms in adults aged in their fifties through their nineties in California. They found that the women and men, across the large age range, express similar norms of trust, commitment, loyalty, affection, self-disclosure, assistance, tolerance, consideration, and respect in friendships. In hypothetical scenarios depicting friendship situations, however, a number of sex differences emerged that indicated that women tend to expect more from their friendships than men do. Women were more critical when individuals violated friendship rules, for instance, betraying a confidence, failing to stand up for a friend who is criticized in public, and making a surprise visit to a friend's house. Miller, Perlman, and Brehm (2007) have reviewed additional research on men's and women's friendships and friendships across the life cycle.

See also empathy, intimacy, relationships, social support, trust.

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Functional Magnetic Resonance Imaging

Functional magnetic resonance imaging (fMRI) is a measure of brain activity that works by tracking changes in oxygen uptake in areas of the brain. When brain cells become more active, they utilize more oxygen. The oxygen is taken from red blood cells in nearby blood vessels. Red blood cells that contain oxygen respond differently to a magnetic field than do red blood cells that lack oxygen.

An individual undergoing an fMRI procedure lies down motionless inside an fMRI scanner. The scanner surrounds the head and measures changes in response to the magnetic field. It assesses all areas of the brain and can identify the location of change (the specific brain area in which a change occurred) with an accuracy of one to two millimeters. Changes are detected in a little less than a second. Compared to another type of brain scan, the electroencephalography, the fMRI scanner is significantly more accurate in locating a specific brain area but is slower in terms of detecting change.

Magnetic resonance image (MRI) of a human brain. (morgue File.com)

An fMRI is very useful as a tool for contributing to the understanding of many topics related to emotion such as which particular brain regions are associated with general emotional experience, which particular brain regions are associated with specific emotions, and which brain regions are associated with recognizing emotions in others (emotional perception). Hundreds of studies have been conducted on these topics (see Wager et al., 2008, for a review).

One disadvantage of using an fMRI is that the equipment is very expensive. Additionally, some individuals, especially children, will not allow themselves to be placed inside the device, which is extremely noisy and can create a feeling of claustrophobia.

See also electroencephalography, positron emission tomography, single photon emission computed tomography.

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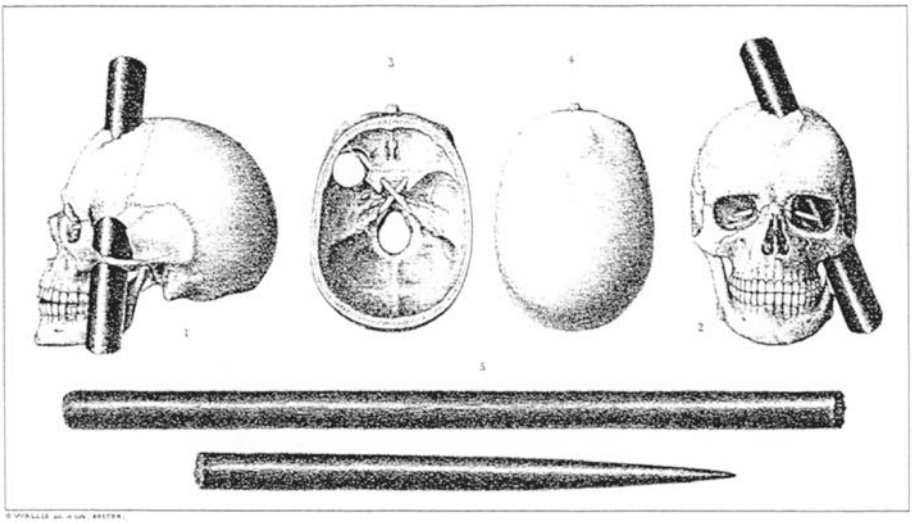
G

Phineas P. Gage (1823–1860)

In the summer of 1848, 25-year-old Phineas P. Gage was a construction foreman working for Rutland and Burlington Railroad in Vermont. Gage's crew was blasting rock to make way for railroad track on the banks of the Black River near Cavendish. Gage was setting up a detonation; he had already drilled a hole, into which he placed blasting powder and fuse. This was usually followed by sand, which is tamped down to help control the direction of the blast. However, Gage became distracted and began tamping the powder before sand was added. The ensuing explosion caused the tamping iron to pass through Gage's left cheek, pierce the base of his skull, cross through the front of his brain, and exit out the top of his head. The tamping iron weighed approximately 13 pounds, was 43 inches long, and was tapered, going from a diameter of 1¼ inches at one end to one quarter inch at the pointed end. Gage was knocked to the ground; he was stunned but conscious. Immediately after the incident, he was able to walk and talk coherently and appeared rational afterward.

Gage survived the infection and high fever that followed the injury (this was long before the discovery of antibiotics) and was pronounced completely cured less than two months later (Damasio, 1994). However, he exhibited significant behavior and personality changes. Whereas before the injury, Gage was reported to be well mannered, energetic, and a good businessman, after the injury he exhibited impulsivity, rapid mood changes, poor discipline, use of profanity (which he apparently had not previously), and was unable to make or follow through with plans. Gage lost his job as a railroad foreman; he found employment working on horse farms, traveled for a while as an attraction with Barnum's Circus, then moved to South America, where he worked for seven years (sometimes as a stagecoach driver). His health began to deteriorate in 1859, and in 1860 he moved back to the United States to live with his mother and sister in San Francisco. He developed seizures, which got progressively worse. In 1861, he had a series of epileptic seizures, one after another (*status epilepticus*), and died at the age of 38.

Dr. John Harlow's account of his treatment of Gage sparked a scientific debate. At the time, there was controversy between those who believed that certain brain



An 1850 artist's interpretation of the skull of Phineas Gage, a railroad worker who made headlines in 1848 when he survived an accident that left a hole in his head. Though the holes in his head eventually healed, the brain injury changed his personality. (AP/Wide World Photos)

regions were linked to specific functions (e.g., language, motor coordination) and those who did not. Nelson Sizer lectured and wrote about phrenology, a pseudoscience of the time that attributed brain regions to personality or emotional characteristics. In his 1884 book about phrenology, Sizer explains that the personality changes observed in Gage were due to the tamping iron passing "in the neighborhood of Benevolence and the front part of Veneration" (Damasio, 1994, p. 17). The Benevolence and Veneration "brain organs" purportedly controlled proper behavior, kindness, and respect for others. Sizer surmised that profanity was the result of damage to Gage's organ of Veneration (Damasio, 1994). British physiologist David Ferrier, who had knowledge of other cases with brain lesions (wounds) associated with behavioral change, examined Harlow's findings. Ferrier concluded that Gage's language and motor (movement) centers had been spared but that damage to the prefrontal cortex could be related to Gage's personality changes.

While an autopsy was not initially performed on Gage, Dr. Harlow petitioned for an exhumation several years later. Gage's skull and the tamping iron were sent to Harlow; they have been kept at Harvard Medical School's Warren Medical Museum in Boston ever since. Neuroscientist Hanna Damasio examined the skull using photography and modern imaging techniques (e.g., magnetic resonance imaging) 120 years later (Damasio, 1994). She was able to confirm that the injury damaged Gage's prefrontal cortex (part of the frontal lobe), more on the left hemisphere than the right, with more damage in the front (anterior) portion than the back (posterior). There was damage to the ventromedial prefrontal region (middle underside of the frontal lobe), which is critical for normal decision making (Damasio, 1994). Gage's case is significant because it taught about impairment associated

with his pattern of traumatic brain injury. While attention, memory, language, and motor functions appeared to remain intact, Gage experienced profound changes in his personality, social functioning, ability to act in his own best interest, and ability to anticipate and plan for the future. Later research has shown a connection between impaired social functioning and frontal lobe damage. Neuroscientist Antonio Damasio refers to this pattern of frontal lobe damage as the Gage matrix. Other individuals with similar brain damage have shown similar patterns of impairment (Damasio, 1994).

See also phrenology, prefrontal cortex, traumatic brain injury.

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Galvanic Skin Response

A galvanic skin response (GSR) meter is a means of measuring electrical resistance of the skin. It was named in honor of Italian physiologist Luigi Galvani (1737–1798), who discovered *animal electricity* (the effect of electricity on dissected animals; Roeckelein, 1998). It is also known as electrodermal response, psychogalvanic reflex, or skin conductance response. The apparatus used to display GSR is known as a GSR meter, galvanometer, or psychogalvanometer.

A GSR meter (or galvanometer) is a simple device that measures electrical resistance on the surface of the skin. When an individual sweats (perspires) more, skin resistance decreases. *Decreased* resistance often occurs when someone is physiologically aroused (e.g., afraid, startled, excited, or other strong emotions), and resistance tends to *increase* (less sweating) when someone is calm, relaxed, or not physiologically aroused. However, individuals react differently to different stressors and stimuli. So while a small stressor may cause a large galvanic skin response in one person, another person might exhibit no discernible response. People can train themselves to minimize physiological reactions to stressful stimuli. Variation in individual reactions is one factor that leads to the unreliability of GSR-based systems such as the polygraph (lie detector). In addition to measuring GSR, the polygraph measures other physiological functions such as heart rate. Because individual responses vary widely, and because people can learn to minimize their physiological responses, the validity of polygraph results has been called into question. Galvanometers have been used as tools in psychoanalysis, hypnotherapy, biofeedback, and behavior therapy.

Researchers have been investigating the link between GSR and emotion since the late 1800s. In the 1888 transactions of the Société de Biologie, French neurologist Charles Féré stated that a galvanometer needle moved under the influence of emotions (Peterson, 1908). In an 1890 article published in *Pflüger's Archiv fur Physiologie*, Russian physiologist Ivan Romanovich Tarchanoff discussed the influence of

"psychic processes" on the galvanometer (Peterson, 1908). Later research was conducted and published by psychologist Harold Sticker in 1897, Swiss neurologist S. Veraguth in 1902, and Swiss psychiatrist Carl G. Jung in 1906 (Jung, 1907; Peterson, 1908). Jung and Peterson conducted experiments demonstrating that anticipation, embarrassment, and other emotions were associated with greater galvanometer responses (Peterson, 1908). In the early 1950s, American psychologists Richard S. Lazarus and Robert A. McLeary conducted word association experiments in which they conditioned subjects to fear certain words by associating them with an electric shock. They found that the galvanometer registered a greater response when subjects were exposed to feared words, even when no electric shock was administered. They called this effect *subception* (also known as a conditioned emotional response) for a type of perception that occurs below conscious awareness (Solomon, 2004). Subception, and galvanic effects observed by Jung and Peterson, were noted to be related to the fight-or-flight response studied by Walter Cannon (Solomon, 2004). The galvanic response is part of a number of automatic physiological reactions that have had evolutionary advantages for humans, allowing individuals to automatically react to perceived threats. The physiological response of sweating in response to stress or excitement is a function of the sympathetic nervous system (SNS), which is part of the autonomic nervous system. The SNS is activated during the fight-or-flight response, resulting in increased heart rate, blood pressure, and perspiration and decreased digestive activity. Fear, excitement, stress, and emotional arousal can all activate the SNS.

See also behavior therapy, biofeedback, Walter Cannon, conditioned emotional response, evolutionary psychology (human sociobiology), hypnotherapy, psychodynamic psychotherapy and psychoanalysis.

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- *Animal electricity* was used to describe bringing organisms to life using electricity, as in Mary Shelley's *Frankenstein.*
- L. Ron Hubbard (founder of the Church of Scientology) utilized a galvanometer, which he called an electropsychometer (or E-meter), to purportedly detect the movement of mental images and find engrams. Hubbard claimed these engrams caused psychological and life problems (Chryssides, 1999).

Gamblers Anonymous

Gamblers Anonymous (GA) is a 12-step fellowship modeled after Alcoholics Anonymous (AA). The first group meeting of GA was held in 1957 in Los Angeles, California. There are GA chapters in the United States (in all 50 states plus the District of Columbia) and at least 48 other countries. GA is supported through voluntary member contributions.

GA members come together at meetings to help themselves and one another stop compulsive gambling. GA meetings are peer support groups; they are not led by professionals. Treatment involves following the 12 Steps of GA, which are modeled after AA's 12 Steps. The steps are based on spiritual principles. The spirituality does not imply religiosity, and members represent a variety of religious faiths, atheism, or agnosticism.

In addition to the 12-step recovery program, GA also adheres to a philosophy of unity of the group and responsibility to the group. Some of the unity principles are as follows: individuals' personal recovery depends on group unity and collective welfare comes first, each group is financially self-supporting and shall remain free of outside financial influences, GA has no opinion on issues other than those related to the purpose of the group (gambling recovery), and anonymity of group members shall be protected. The GA organization views compulsive gambling as an illness with emotional roots and adheres to a principle of abstinence (complete quitting) of gambling. According to GA, compulsive gambling is destructive not only financially but also often interpersonally, occupationally, and sometimes legally. Other 12-step programs designed to help people with emotional difficulties include Anorexics and Bulimics Anonymous, Depressed Anonymous, Dual Diagnosis Anonymous, Emotions Anonymous, Dual Recovery Anonymous, and Obsessive Compulsive Anonymous.

See also Alcoholics Anonymous, 12-step programs.

Further Reading:

Gamblers Anonymous Web site: http://www.gamblersanonymous.org/

Gender and Emotions

Gender is not the same as physical (biological) sex, although sometimes the terms *gender* and *sex* are used interchangeably. *Gender* is a social and cultural construct that may dictate appropriate roles for men and women and concepts of masculinity or femininity within a society. Gender roles can extend to appropriate jobs, family roles, parenting, division of household labor, appearance, independence versus interdependence, intimacy, control, behavior, emotional expression, and many other areas. In many societies, males are socialized to suppress some emotions (e.g., "boys don't cry") that are typically thought of as feminine and to express "masculine" emotions such as anger.

Gender differences in emotional expression have been observed as early as preschool. Socialization pressures tend to orient girls to convey submissive emotions (e.g., sadness or anxiety) and boys to be more willing to express disharmonious feelings (e.g., anger). In the United States, women tend to be more relationship oriented than men, while men are expected to be more assertive and aggressive

(Chaplin, Cole, & Zahn-Waxler, 2005). Gender socialization and emotions (experiences and behavior) are influenced by family structure and dynamics, parenting styles, culture, class, and individual temperament.

There are many stereotypes about gender and emotion. One stereotype is that women are more emotional (in expressiveness, intensity, and reactivity) than men. This stereotype extends across cultures and age groups. While men are thought to be more logical and to experience and express anger and pride more than women, women are perceived to experience many positive and negative emotions (e.g., happiness, fear, disgust, and sadness) more than men. Women are seen as more skilled than men at sending and receiving nonverbal cues, smiling, laughing, and gazing (Brody & Hall, 2000). However, research has produced inconsistent results (McRae, Ochsner, Mauss, Gabrieli, & Gross, 2008). Women are more facially and gesturally expressive than men. Although emotional expressions (facial, gestural) do not always reflect actual feelings, women's expressions tend to be less discrepant than those of men. Women produce more genuine smiles than men, and men convey anger more clearly in their facial expressions than do women (Brody & Hall, 2000).

Gender stereotypes are reinforced by the popular media. For example, *Men Are from Mars, Women Are from Venus* (Gray, 1992) is a book that purports to help men and women in relationships communicate with each other. However, the book resorts to using stereotypes and oversimplifications to explain and justify behavior.

Cross-cultural studies have found that men report experiencing more emotions that are powerful (e.g., anger), while women report experiencing more powerless emotions (e.g., sadness, fear). Researchers posit that these findings are reflective of differences in status and gender roles throughout the world (Fischer, Rodriguez Mosquera, van Vianen, & Manstead, 2004). *Gender display rules* are cultural norms that specify how, when, and where emotions can be expressed by males and females in a given situation. Violating stereotypic gender display rules can lead to negative social consequences (e.g., social rejection, employment discrimination). Since much of the research on gender and culture relies on self-report measures (e.g., interviews, questionnaires), it is likely that research results are influenced by stereotypes and display rules. Therefore research findings should be interpreted with caution (Brody & Hall, 2000).

Emotional reactivity refers to the processes that determine the nature and strength of an individual's emotional response. *Emotion regulation* describes the processes individuals use to influence the nature of those emotions and how emotions are experienced and expressed. Women are diagnosed almost twice as much as men with affective disorders (e.g., depression, anxiety). There is a perception that men and women differ in their emotional responding, but research findings are mixed regarding gender differences in emotional reactivity and regulation. Many affective disorders involve difficulties with emotional regulation, and treatments for these disorders involve training in emotional regulation, including cognitive reappraisal—techniques to learn to think differently about a situation or feeling. Functional magnetic imaging (fMRI) studies utilizing cognitive reappraisal techniques found no differences between men and women in terms of emotional reactivity, and men and women reported comparable decreases in negative feelings using cognitive reappraisal. However, it was found that during cognitive reappraisal, men showed greater decrease in amygdyla activity and less prefrontal cortex activity (brain regions

involved in emotion control and processing). It is posited that men may be able to regulate their emotions (using cognitive reappraisal) with less effort than women or that women may use positive emotions to regulate their emotions more than men (McRae et al., 2008).

See also amygdala, body language, culture, depression, display rules, emotion regulation, facial expression, functional magnetic resonance imaging, gender and emotions, nonverbal expression, smiling.

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Generalized Anxiety Disorder

People with generalized anxiety disorder (GAD) suffer from chronic and pervasive anxiety and worries about all-encompassing life situations. According to criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), this excessive or ongoing anxiety and worry lasts for at least six months and is centered on numerous issues or events. Individuals diagnosed with GAD experience significant distress or impairment (e.g., in social or occupational functioning), have difficulty controlling worry, and have at least three of the following symptoms: restlessness, easy fatigue, irritability, muscle tension, or sleep disturbance.

Most frequently, the onset of GAD occurs in childhood or adolescence. In the United States, about 3 percent or more of the population shows symptoms of GAD each year (Kessler, Chiu, Demler, & Walters, 2005). GAD is diagnosed more frequently in women than in men.

Researchers have tried to explain the cause of this disorder from different perspectives. Family pedigree studies have found an increased likelihood of the disorder among blood relatives of a person with GAD. This suggests the possibility that GAD is an inherited disorder. Consistently, the link between GAD and dysfunction in the activity of gamma-aminobutyric acid (GABA) has been reported (Roy-Byrne, 2005). GABA is a neurotransmitter in the brain that carries inhibitory messages from one neuron to another, thus preventing the receiving neuron from firing. People with GAD are thought to have malfunctions in this GABA system, leading to a persistent rise in anxiety (because GABA fails to prevent the neurons from firing).

Cognitive theorists (e.g., Beck, Brown, Steer, Eidelson, & Riskind, 1987) assume that GAD is caused by dysfunctional ways of thinking, particularly holding belief

that danger is omnipresent. Research has consistently supported the idea that people with GAD have such beliefs (e.g., Riskind & Williams, 2005). More recently, other cognitive theorists have supplemented the original cognitive model of GAD. For instance, Adrian Wells (2005) has proposed the *metacognitive theory of generalized anxiety disorder*, which emphasizes that people's beliefs about worrying are the most pathogenic of their anxiety-related beliefs. Specifically, they value worrying as a means of problem solving but at the same time believe that worrying is both psychologically and physically harmful because society tells them that this is so. Thus they worry about worrying (called *metaworrying*). Another explanatory perspective on GAD is the sociocultural one, maintaining that societal conditions are related to development of GAD.

The most effective treatments for GAD are cognitive therapy, stress management training, and medication. All these treatments produce moderate relief, though people can be still anxious. Cognitive therapy is used to change negative thinking patterns. Clients are encouraged to be aware of their dysfunctional thinking patterns that provoke their anxiety and to replace these thoughts with appropriate assumptions. Two stress management techniques that have been utilized for GAD are meditation and progressive muscle relaxation (progressively tensing and relaxing the various muscle groups throughout the body).

Antianxiety medications (anxiolytics) such as benzodiazepines are also used to treat people with GAD. Benzodiazepines enhance the ability of GABA to bind to receptor sites on receiving neurons, thus inhibiting the action of the receiving neuron, resulting in low bodily arousal and lessened levels of anxiety. Because benzodiazepines can cause physical dependency and side effects, they are usually prescribed for short periods of time. Other medications that show promise in the treatment of GAD include some antidepressants, beta blockers, and other antianxiety medications that work through different mechanisms than do the benzodiazepines. These newer drugs appear to have much less potential for addiction.

See also anxiety, anxiolytic, benzodiazepine, cognitive therapy and cognitive-behavioral therapy, meditation, progressive muscle relaxation, Valium.

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- Approximately 6.8 million American adults, or about 3.1 percent of people aged 18 and over, have GAD in a given year (Kessler, Chiu, Demler, & Walters, 2005).
- The median age of onset is 31 years, although GAD can begin at any time of life (Kessler, Berglund, Demler, Jin, & Walters, 2005).

Genetics

In his classic book published in 1872, *The Expression of the Emotions in Man and Animals*, Charles Darwin described and graphically depicted commonalities in expression of emotion across diverse animal species. In presenting similarities across species, he argued for a genetic basis of emotional expression. Despite the influence that this book had on research in various fields, including biology and psychology, very few researchers extended Darwin's view to include an examination of a genetic basis of individual differences in emotional traits until over 100 years later.

Beginning in the 1950s, Peter Broadhurst began selective breeding studies on rats, called the Maudsley selective breeding studies. His results showed that rats can be bred to be either high or low open-field defecators; high open-field defecation is considered high emotionality (emotional reactivity) in rats (Broadhurst, 1960). In humans, Buss and Plomin (1984) reviewed research on twin and family studies on three temperament traits and concluded that research demonstrates a moderate influence of genetics on emotionality. In a study of identical and fraternal twins reared together and apart, Tellegen et al. (1988) reported evidence for heritable components in personality traits that are related to tendencies to experience positive and negative emotions.

Research has also been conducted in the realm of specific negative emotions. In a large study of Australian twins, Kendler, Heath, Martin, and Eaves (1986) reported that genetic factors influence symptoms of anxiety and depression. Rose and Ditto (1983) found that common fears are partially inherited, with differential magnitudes of genetic influence for different fears.

Funder (2010) discusses the logic behind twin studies and adoption studies, limitations of these designs, and the meaning of some concepts often discussed when discussing heritability such as the heritability coefficient. As he states, all traits that are heritable are also influenced by the environment—the influence of genes is continually affected by the environment. Additionally, for this reason, we cannot determine a precise amount of heritability of a trait that would be the same across all environmental conditions. For instance, height is influenced by genes, but nutrition influences height as well. Someone with a genetic predisposition to be tall will likely not become tall if nutrition is poor during development. If children

in a particular community have equal nutrition and are equal in all other environmental conditions, all differences in height will be determined by their genes. Since environments are never actually equal across people in the real world, heritability cannot be precisely determined for a particular trait, although after a great deal of research on traits in different environmental conditions, we can make comparisons between traits and may be able to reasonably conclude that one trait is more heritable (overall) than another trait. As an example of research on gene-environment interaction on an emotional trait, results of a study by Caspi et al. (2002) demonstrated a gene-environment interaction on the development of antisocial behavior. Caspi and colleagues investigated why some mistreated children become criminals while others do not. They found that a gene that affected an enzyme called monoamine oxidase A (MAOA), which affects how several neurotransmitters (chemical messengers) function, influenced criminal behavior. Specifically, mistreated boys who had the gene linked with low MAOA activity were much more likely to engage in antisocial behavior than were mistreated boys who had the gene associated with high MAOA activity (85% of low–MAOA activity boys; no significant risk for high–MAOA activity boys). As Funder (2010) discusses, research in this specific area of genetics—molecular genetics (studying the genetic influences at a molecular level)—is especially promising.

The influence of genetics on emotional traits (or any other trait) is even more complex than described. For example, sometimes one gene has the capability of silencing another gene, meaning that one gene can essentially block the potential effect of another gene or genes. Wenner (2009) briefly discusses some of the current research in this area.

See also Charles Darwin, environment, evolutionary psychology (human sociobiology), neurotransmitter, Edward O. Wilson.

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Gestalt Therapy

Gestalt therapy is a type of existential therapy based on theories and techniques developed in the 1940s by Friedrich (Fritz) Perls (1893–1970), a German-born psychiatrist. Laura Perls (Fritz's wife) and Paul Goodman worked with Fritz Perls to refine the ideas and techniques of Gestalt therapy. Other theorists further developed the model in the 1970s, especially Joen Fagan and Irma Lee Shepherd (Gladding, 2004).

Gestalt sprang from the early-20th-century Gestalt movement founded by Czech psychologist Max Wertheimer (1880–1943), German psychologist Kurt Koffka (1886–1941), and German psychologist Wolfgang Köhler (1887–1967). The Gestalt movement was based on the philosophical and psychological theories of Johann Wolfgang von Goethe (1749–1832), Immanuel Kant (1724–1804), and Ernst Mach (1838–1916). *Gestalt* means "the whole figure." The main idea of Gestalt is that the whole defines the parts of which it is composed. A Gestalt perspective maintains that objects (and people) are more than the sum of their parts; objects are perceived within an environment according to all their parts taken together. While influenced by Wertheimer's theories, *Gestalt therapy* is only peripherally linked to *Gestalt psychology.*

Gestalt therapy arose largely in reaction to what Perls perceived as the reductionist emphasis of other therapies at that time (e.g., psychoanalysis [Freudian psychotherapy] and behaviorism). Gestalt therapy operates on the premise that people strive for wholeness and completeness in their lives (i.e., people have a self-actualizing tendency) and emphasizes how people function in their totality (or whole). The self-actualizing tendency emerges through self-awareness and personal interaction with the environment. The Gestalt view places trust in people's inner wisdom and a belief that people seek to live in an integrated fashion and strive toward a healthy, unified whole. People are *actors* in the events around them, not just *reactors* (Gladding, 2004).

Gestalt is an existential, phenomenological, and experiential therapy that emphasizes the present moment. According to the *existential* perspective, people form their lives by the choices they make. A *phenomenological* perspective maintains that a person's perception of reality or an event is more important than the event itself. *Experiential* learning is that which is derived from experience. Gestalt therapy utilizes a person's life experiences (and exercises and experiments in therapy) to help develop insight. The emphasis is on discovering different aspects of the self through experience rather than talk. Gestalt therapy purports that an overdependency on intellectual experience diminishes the importance of emotions and the senses, limiting a person's ability to respond to situations. The basic goal of Gestalt therapy is to attain awareness through self-knowledge, taking responsibility for choices, contact with the environment, and self-acceptance. Gestalt therapy does not aim to analyze internal conflicts but to integrate them. Conflicts include *unfinished business* (earlier

thoughts, feelings, and reactions that still affect personal functioning and interfere with living. An example of unfinished business is not forgiving one's parents for their mistakes. The identification and resolution of conflicts allows an individual to grow and move forward in life.

The role of the Gestalt therapist is to create an atmosphere that promotes a client's exploration by being honest, exciting, energetic, fully human, and intensely and personally involved with clients (Gladding, 2004). Maintaining focus on the present moment (the here and now) allows the therapist to help clients recognize patterns in their lives. Recognition of the immediacy of experience, a focus on verbal and nonverbal communication (e.g., body language), and focus on the concept that life includes making choices all help the client to resolve the past and become integrated.

With an emphasis on action (more than analysis or interpretation), Gestalt therapy techniques utilize exercises and experiments. Exercises—designed to evoke certain responses from the client such as anger or frustration—include the enactment of fantasies, role-playing, psychodrama, and dream work. Unlike dream work in psychoanalysis, the Gestalt therapist does not interpret dreams. Clients recount dreams and are directed to experience what it is like to be in each part of the dream. One Gestalt exercise is the *empty chair*, in which clients talk to various aspects of their personality; this helps clients deal with the dichotomies and conflicts within them. Gestalt experiments are unplanned activities that grow out of the interaction between client and therapist.

Perls challenged clients to see how they were avoiding feelings or avoiding responsibility using a confrontational, abrasive, and theatric style. A newer version—relational Gestalt therapy—shows more support, kindness, and compassion than Perls's original Gestalt therapy style (Corey, 2008). While Gestalt therapy has been adapted for use in a group format, it was originally developed for use in individual therapy (Corey, 2008). Gestalt therapy is suitable for individuals with mood disorders (e.g., major depressive disorder, bipolar disorder), adjustment disorders, somatoform disorders (e.g., physical symptoms with no known physical cause), and occupational or interpersonal problems (Gladding, 2004). It is not a recommended treatment for individuals with severe emotional disturbance (e.g., schizophrenia).

Gestalt therapy is a flexible approach that helps people integrate all aspects of their lives. It considers the whole individual, in the present moment, within the context of their environment and relationships. Critics say that Gestalt therapy lacks a strong theoretical base. Some say that Gestalt therapy is too focused on technique (exercises) and the present experience to allow for passive insight and change, which may work better for some people. Others have said that Gestalt therapy is self-centered, focusing solely on feelings and personal discovery. A limitation of Gestalt therapy is that it does not utilize diagnosis or assessment techniques (Gladding, 2004). This makes it difficult to monitor progress and change and could result in an individual receiving an inappropriate type of therapy. It is crucial for Gestalt therapists to be properly trained and supervised, lest they cause harm to clients (Gladding, 2008).

See also body language, encounter group, existential psychotherapy, experiential therapy, humanistic psychotherapy, nonverbal expression, psychodrama, psychodynamic psychotherapy and psychoanalysis.

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Gestalt Therapy Page: http://www.gestalt.org/

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Grief

Grief is a complex, often long-lasting reaction to a loss. The loss may be anything of central importance to a person such as another person, a job, a home, one's physical ability (i.e., becoming disabled may lead to grief), and other losses. Most often, research and theorizing about grief has focused on the aftermath of death of a loved one.

Bonanno, Goorin, and Coifman (2008) identified four characteristics of grief. First, it is a state that endures, usually lasting between a few weeks and several years. Second, it may be associated with a variety of emotions, notably sadness, but other negative emotions, such as anger, fear, guilt, and others. Some positive emotions may also be present at points during the grieving process, including happiness, pride, and amusement. Third, the event that precipitated the grief state was a blow to one's understanding, either of oneself or of the world, or both. Grieving therefore involves a re-creating of meaning; identity may become restructured and/or worldviews may transform. Fourth, grief involves extensive, long-term efforts at coping. Bonanno et al. (2008) and other researchers suggest that the occurrence of positive emotions during grief is healthy. Experiencing positive emotions punctuating the negative emotions makes it less likely that the individual will slip into a downward spiral of negative emotion that could become a dysfunctional state such as clinical depression.

Psychotherapist J. William Worden wrote *Grief Counseling and Grief Therapy* (2008), a handbook for mental health professionals who treat grief. He discussed four tasks that constitute grieving, which are to accept that the loss is real, to feel the pain of the loss, to adjust to the new circumstance and environment without the lost person or object, and to withdraw one's emotional energy from the lost person/object and attach the energy to a new person/object. Knowledge of these four tasks can help the mental health professional identify areas of grieving in which the client is having difficulty.

Grief has engaged the interest of researchers and thinkers from diverse fields such as psychology, philosophy, anthropology, and others. Anthropologists have observed grief reactions across cultures, noting both similarities and differences. For instance, in mainstream American culture, a death is typically followed by a single funeral. In some other cultures, deaths may be commemorated in several ceremonies over several years. Grief is a popular theme in the arts. For centuries, novelists, musicians, and poets have described or represented grief in eloquent and moving fashion. This universal and profound experience is sure to continue as a common theme in art and an intriguing field of inquiry in the future.

See also acceptance, anniversary reaction, culture, depression, loss, sadness.

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Group Therapy

Group psychotherapy is a type of therapy that occurs with a number of clients meeting together in a group. The group is often led by a therapist with a particular theoretical orientation. Group members may have similar presenting problems or issues and may share common treatment goals. This may include treatment of emotional or behavioral disorders or remediation of psychological problems that interfere with functioning. Some types of group therapy focus on helping people change their ways of thinking, feeling, and behaving. Groups with an educational focus (known as psychoeducation) help members learn specific coping skills (Corey, 2008).

Therapists from a variety of theoretical perspectives conduct group therapy, using approaches and techniques consistent with these theories. There are psychoanalytic, Adlerian, psychodrama, existential, person-centered, Gestalt, transactional analysis, cognitive-behavioral therapy (CBT), rational emotive therapy, reality therapy, and solution-focused brief therapy groups. Group therapists may be clinical or counseling psychologists, licensed mental health counselors, or clinical social workers.

Boston physician Joseph Hersey Pratt started the first psychotherapy group in 1905 with tuberculosis outpatients at Massachusetts General Hospital (Gladding, 2004). These group members found their regular meetings to be informative, supportive, and therapeutic. In the 1920s, Viennese psychiatrist Jacob L. Moreno developed psychodrama (a group technique) and introduced the term *group psychotherapy*. In psychodrama, members participate in unrehearsed role-plays, with group members playing the parts of protagonist, supporting actors (auxiliaries), and audience members and with the group leader acting as director. German-American social psychologist Kurt Lewin's field theory concepts of the 1930s and 1940s became the basis for the Tavistock small study groups in Great Britain and the T-group movement in the United States. T-groups (where the *T* stands for *training*) evolved from a focus on task accomplishment to a focus on interpersonal relationships. German-American psychiatrist Fritz Perls utilized a Gestalt therapy approach with groups in the 1940s. In the 1960s and 1970s, American psychologists William Schutz and Jack Gibb emphasized a humanistic aspect to T-groups, and American psychologist Carl Rogers developed the encounter group. These types of groups became the model for growth-oriented group approaches (Gladding, 2004).

The group therapy movement of the 1960s influenced the ongoing development of family therapy, which shares some features with group therapy. There are

similar theoretical underpinnings in group and family therapy. Both groups and families focus on problem behaviors, influences between people and the environment, and the influences of family on individual behavior. However, because a family has a shared history and multigenerational influences, family work calls for different techniques than working with a group of unrelated individuals. Families are also different because of family roles, multiple complex relationships within families, and differences in status and power within a family. A concept of group dynamics that is important to both group and family therapy has to do with communication. It is important to make a distinction between the *content* (what is said) and the *process* (how it is communicated) of communication.

Group therapists use a wide range of techniques, including focusing on group process through discussion, inducing regression to earlier experiences, and helping members reexperience traumatic situations so that catharsis (emotional release) can occur. Through the group process, members gain insight into past decisions and behaviors that interfere with current functioning. The group therapist helps members develop a corrective emotional experience and to make new decisions about themselves and others as they interact with their environment.

Some benefits of group therapy may include a sense of universality (learning that one is not alone; that others share similar issues and goals), instillation of hope and mutual support, the opportunity to help others (as well as to receive support from peers), development of socialization and problem-solving strategies, interpersonal learning, catharsis, bonding with other group members, and improved functioning (Gladding, 2004). Group therapy can be an efficient and cost-effective way to help people with similar goals or concerns. However, not all individuals in all situations are appropriate for group therapy. For example, individuals who are unequal in status or power (e.g., employees and managers in a company) might not all benefit together in a group that focuses on personal issues. Likewise, group therapy might not be the most appropriate treatment for children who all have problems with disruptive behavior. Some individuals might benefit more from other types of therapies (e.g., individual psychotherapy, medication) than from group therapy. A trained mental health practitioner may be able to recommend appropriate therapeutic interventions after a thorough intake and assessment and consideration of an individual's presenting problems, background, and circumstances.

See also cognitive therapy and cognitive-behavioral therapy, encounter group, existential psychotherapy, family therapy, Gestalt therapy, psychodrama, psychodynamic psychotherapy and psychoanalysis, rational emotive behavior therapy, Carl Rogers.

Further Readings:

American Group Psychotherapy Association Web site: http://www.agpa.org/pubs/index.html

American Society of Group Psychotherapy and Psychodrama Web site: http://www.asgpp.org/html/about_us.html

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Guilt

People can be plagued by guilt, but modern emotion theorists say that guilt, while generally experienced as unpleasant, can be a functional emotion. Guilt is "the negative emotion felt when one fails or does something morally wrong but focuses on how to make amends and how to avoid repeating the transgression" (Kalat & Shiota, 2007, p. 239).

Guilt tends to occur in two types of circumstances: (1) an individual feels that she has done something morally wrong or (2) an individual has disappointed herself or others by failing to live up to standards or expectations (Tangney, Miller, Flicker, & Barlow, 1996). Guilt may be associated with a particular bodily and facial expression that involves a lowering of the eyes, no smile or a very slight frown, and a slumping posture (although some have disputed this third aspect, e.g., Lewis, 2008, suggesting that the posture of the guilty person is one of projected forward movement).

Much of the preceding description applies also to shame, and many emotion researchers make note of the commonalities or overlap between guilt and shame. Both guilt and shame are negative emotions, involving an evaluation of the self. In both cases, the individual feels that she has committed a moral transgression or has been a disappointment to herself or others. What distinguishes guilt from shame is the way that the individual understands the negative act or event in relation to the self. In shame, the individual thinks that the negative event means that she is a bad person. In guilt, the person believes that the negative event means her behavior was bad, but not that her whole self is bad. Therefore the attribution of the event is different in the cases of shame and guilt. Both attributions involve the self, but in shame, the individual is making a global attribution (whole self), whereas in guilt, she is making a specific attribution (a behavior; Lewis, 1992).

As Lewis (2008) states, the fact that this attribution is specific rather than focusing on the whole self makes guilt a more functional and less intense emotion than shame. In guilt, the individual thinks of ways to make amends for the wrong act. Although guilt is painful, it contains hope; something can be done to make the wrong right or to prevent the same action from occurring in the future. Conversely, shame is associated with hopelessness and leads to confusion and behavioral paralysis.

In Sigmund Freud's theory of personality, guilt plays a central role (e.g., Freud, 1905/1953). For Freud, guilt derived from the superego. The superego is a component of the personality that develops in childhood, immediately following the Oedipal (occurs for boys) or Electra (occurs for girls) complex, in which the child has developed an attachment and attraction to the (usually opposite-sexed) parent. This complex is emotionally complicated and intense for the child; among other emotions, the child desires exclusive possession of the loved parent and feels jealousy toward the other parent. When the child realizes that she will not have her loved parent in the way that she wants, the complex comes to an end. As the complex resolves, the child internalizes the morality of (usually) her same-sexed parent, thinking that in becoming like the person that her opposite-sexed parent loves, she is making herself attractive to people who are similar to her opposite-sexed parent. This is when the conscience (superego) is born. Therefore, in Freud's theory, the consciences of most people bear a similarity to the consciences of their same-sexed parents.

In Freud's theory of guilt, the self-attribution that is made about the negative event or circumstance is specific (focusing on the individual's behavior), not global (focusing on the whole self). Therefore, as in modern conceptions of guilt, the afflicted individual may be able to do something about the guilt. Freud suggested a variety of ways that the individual could attempt to atone for the guilt. Some examples include making amends with the harmed person, actively punishing oneself in a variety of ways, and self-deprivation.

See also embarrassment, Sigmund Freud, nonverbal expression, pride, psychoanalytic perspective, shame.

Further Reading:

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H

Hamilton Depression Scale

The Hamilton Depression Scale (HAM-D or HAMS) is a scale measuring severity of depression in children and adults. It is a semistructured interview developed in 1960 by Max Hamilton to be used by a clinical interviewer to assess severity of depressive symptoms. The semistructured interview provides a basic format with topics to be explored by the clinical interviewer, leaving it up to the individual clinician what questions to ask to obtain the necessary information. It was revised in 1967, 1969, and 1980. Max Hamilton later developed a self-report measure, the Hamilton Depression Inventory (HDI). Later versions of the HAM-D and variations with more (up to 29) items were developed by other people (Reynolds & Kobak, 1995).

Common versions of the HAM-D have 17 or 21 items. Some of the questions asked on the 17-item version include symptoms related to suicidality, insomnia, work problems, agitation, anxiety, physical symptoms, weight loss, and loss of sex drive. An overall depression rating addresses feelings of hopelessness, gloominess, pessimism about the future, and tendency to cry. The 4 additional items on the 21-item version ask about symptoms that may be related to depression (e.g., obsession and paranoia) rather than about depressive symptoms themselves.

On the 17-item version of the HAM-D, the interviewer rates 9 of the items on a scale from 0 to 4, where 0 indicates an absence of depressive symptoms and 4 represents severe symptoms. Eight of the items are rated on a 3-point scale from 0 to 2, where 0 represents the absence of symptoms and 2 represents the clear presence of symptoms. The 17-item score total can range from 0 to 54, where scores between 0 and 6 fall within the normal (nondepressed) range, scores between 7 and 17 indicate mild depression, 18 to 24 indicates moderate depression, and scores over 24 indicate severe depression.

The HAM-D has some limitations. Because the HAM-D asks about both symptoms of anxiety and depression, the resulting depression score is in actuality a measure of both depression and anxiety. However, a trained clinician should be able to distinguish between symptoms of anxiety and depression and use HAM-D results, along with clinical interviewing, to recommend treatments that are appropriate to the presenting symptoms. Also, because the HAM-D is administered by an interviewer, there is some subjectivity in scoring and [illegible]pretation. This [illegible] with a

lack of standardized administration instructions and variations among versions of the HAM-D, may lead to differing results, interpretations, and clinical recommendations.

See also Beck Depression Inventory, Children's Depression Inventory, depression, Depression Anxiety and Stress Scales, dysthymia.

Further Readings:

Clinically Useful Psychiatric scales, HAM-D: http://www.psychiatrictimes.com/clinical-scales/depression/
Encyclopedia of mental disorders: http://www.minddisorders.com/Flu-Inv/Hamilton-Depression-Scale.html

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Happiness

People often state that they aspire to be happy, and people regularly wish happiness for their loved ones. However, people's intuitive understanding of this affective state is imprecise, and many people may know little about what it would actually take to achieve happiness for themselves or for others. A fundamental impediment to understanding is vagueness in terminology. The word *happiness* can mean both a short-lived emotional reaction to a particular event, such as winning a prize, graduating from college, or reuniting with a loved person after a short trip, and a long-lasting way of feeling, akin to an attitude or personality trait. In contrast, many other affective states described in this book are conceptually clear. For instance, both fear and disgust are immediate reactions to particular events such as a near car accident or the experience of observing a dinner partner with poor table manners.

Many researchers have attempted to clarify the diverse positive emotions or affective states by assigning distinct terms to distinct states. For example, Kalat and Shiota (2007) have identified *joy* as the term that applies to an immediate positive reaction to a particular event, whereas *happiness* is the state of positive feeling that is long-lasting. The term *well-being* is similar to the meaning of *happiness*.

Measuring or detecting happiness is best achieved through multiple routes. One form of measurement is to simply ask people about their levels of happiness or related states such as satisfaction or other positive emotions. Another way is to observe behavior. Facially, the expression most associated with happiness is smiling. Of course, people can fake smiling to be polite, ingratiating, or for other reasons; smiling is not a completely reliable indicator of happiness. However, Duchenne smiles are more often true indicators of happiness than non-Duchenne smiles. A non-Duchenne smile involves simply a smiling mouth. A Duchenne smile involves a smiling mouth, raised cheeks, and "smiling eyes," which means that the eyes are somewhat squinted and crow's feet are created. Although Duchenne smiles often (but not always) indicate true happiness, it is important to note that a person can be happy and not smile at all.

Happy people tend to act differently than people who are not happy. The main distinction is that happy people are more sociable and generally behave in a more optimistic fashion, for instance, taking chances and being more assertive (Argyle &

Lu, 1990). Physiologically, happiness is not easily distinguished, although some rough indicators exist. A temporary feeling of joy is associated with a slightly increased heart rate, not nearly as dramatic of an increase as occurs with fear or anger (Levenson, Ekman, & Friesen, 1990). Some specific brain activity is linked to happiness. When people are either happy or angry, the frontal cortex of the left hemisphere of the brain is more active, whereas when people are sad or fearful, the frontal cortex of the right hemisphere increases in activity (e.g., Davidson & Fox, 1982; Henriques & Davidson, 2000). Note that activation of the left hemisphere is associated with both happiness and an emotion that is generally described as "negative": anger. The reason that these two affective states have the same brain activity pattern in the frontal cortex is because this pattern is apparently associated with approach behavior (whereas sadness and fear are associated with avoidance behavior). When an individual is either happy or angry, she tends to become more outgoing and proactive. Additionally, two brain chemicals may be linked to happiness, although research findings are at this point inconclusive. Dopamine, a neurotransmitter (chemical messenger in the brain) associated with pleasure, attention, and some other functions, may be higher in happy people. Also, endorphins, neurotransmitters which inhibit pain, may be more present in happy people than in people who are less happy (Zubieta et al., 2003).

A significant amount of research has been conducted on causes of happiness. Some researchers have simply asked people what makes them happy in their lives. In a large study, Markus, Ryff, Curhan, and Palmersheim (2004) found a number of factors related to life satisfaction. The most common factor was relationships with family and friends. Other common responses were physical health, financial security, self-development, a job that they found satisfactory (or better), faith, and enjoyment of daily activities. When people are asked what would make them more happy, they often mention having more money. However, research indicates that even people who win large amounts of money in the lottery do not become permanently happier. Although they are happier for a few months, they often soon return to the level of happiness that they had prior to winning (Diener, Suh, Lucas, & Smith, 1999).

Some events do appear to have an effect on levels of happiness for long periods of time, often years. In particular, losing a spouse to either death or divorce and losing a loved job can both lead to long-term decreases in overall happiness. Diener and Seligman (2004) found that losing a spouse was associated with diminishing levels of happiness. After the loss, happiness began to slowly increase over the years but did not return to the former typical level of happiness. In a study of 24,000 German workers, Lucas, Clark, Georgellis, and Diener (2004) found that participants' happiness dropped when they lost a job. Then happiness began to increase over time but did not return to prior levels even after 15 years or after getting another job.

The study of happiness and other positive emotions and affective states has exploded since the 1990s, as part of an interest in what constitutes the "good life," a field called *positive psychology*. Research on these positive states has proved fruitful; scientists have learned much about the benefits of positive emotions. Lyubomirsky, King, and Diener (2005) have conducted a large review of research, reporting the links between positive emotional states such as happiness and a wide variety of positive outcomes such as good physical health, satisfaction in relationships, satisfaction with one's work life, and above average prosocial [illegible]. The study of positive

emotion states is "hot," and the field is likely to continue to produce new findings that, when applied, can improve the quality of people's lives.

See also affective personality traits, extraversion, joy, Positive and Negative Affect (Activation) Schedule, positive emotions, positive psychology, satisfaction, Satisfaction with Life Scale, smiling.

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In 2006, Adrian White, an analytic social psychologist at the University of Leicester, used the responses of 80,000 people worldwide to construct a world map of happiness. On the basis of subjective ratings of well-being, Denmark was rated the "happiest" country, followed closely by Switzerland and Austria. England ranked 41st; Zimbabwe and Burundi were the least happy countries (out of 178 nations). A country's level of happiness was most closely associated with levels of health, followed closely by prosperity and education. More information and the map can be viewed online (http://news.bbc.co.uk/2/hi/health/5224306.stm).

Harry Harlow (1905–1981)

Harry Harlow was an American psychologist and experimentalist, famous for studies on monkeys that demonstrated the innate nature of attachment between infant and caregiver (usually mother). Harlow was born Harry Frederick Israel in Fairfield, Iowa. His parents were working class, and his father dabbled in a variety of vocations during Harry's childhood. Harlow's relationship with his parents was positive, although he lamented that he would have appreciated more attention from them. They devoted a great deal of energy to one of Harlow's three brothers, Delmer, who suffered from Pott's disease. Although Harlow's performance in school was only modest, he performed well on an entrance exam and gained admission to Stanford University. He earned both a bachelor's degree and a PhD in psychology there, writing his PhD dissertation on feeding behavior of baby rats. Harlow landed an assistant professorship at the University of Wisconsin, where he spent his career.

Harlow had two marriages, one to Clara Mears and one to Peggy Kuenne. He had two sons with Mears and a son and daughter with Kuenne. He struggled with alcoholism throughout his life and with depression in his later years. His academic career was not without controversy. At a time when the women's movement was gaining force, Harlow refused to change his attitude toward women. In reference to an experiment he was conducting on monkey surrogate mothers, he wrote, "We felt . . . we had really simulated the two extremes of womanhood—one with a hot body and no head, and one with a cold shoulder and no heart" (Harlow & Suomi, 1970, p. 166). In 1967, Harlow won the National Medal of Science, the only primatologist to win this award. In his later years, he suffered from Parkinson's disease and a failing memory. After several trips in and out of hospitals, Harlow died in 1981 at age 74.

Harlow's attachment research brought him fame in both psychology and in the popular press. He conducted experiments in which infant rhesus monkeys were separated from their mothers and raised in isolation. They were raised in sparse cages, in which appeared two mechanisms: a wire contraption that held a milk bottle which fed the monkey and a large contraption made of cloth that served no apparent purpose. The question was, to which "mother" would the monkey run for comfort if it was scared? The answer was the cloth mother. Harlow's study demonstrated that the attachment that an infant (monkey) feels to its mother is based not on feeding but on creature comfort: the need for physical comforting. The study provided strong evidence that this need for creature comfort is innate. Harlow argued that the baby monkey "loved" its (cloth) mother—did not this seeking of comfort indicate love? His classic paper, "The Nature of Love" (Harlow, 1958), presented this position and provided a model for child rearing that contrasted with the prevailing opinion among psychologists at the time. Behaviorist psychologist John Watson (1928) had argued several decades earlier (*The Psychological Care of Infant and Child*) that children should be raised primarily according to behaviorist conditioning principles, and he cautioned against providing too much affection to children. Blum (2002) has written an engaging book about Harlow's life and contributions.

See also Mary D. Salter Ainsworth, attachment, John Bowlby, John Watson.

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Harlow was born Harry Frederick Israel but changed his name to Harry Harlow on the recommendation of his advisor in graduate school. This shows the anti-Semitism of the times: although Harlow was not Jewish, his advisor thought that people would think he was.

Hate

Hate is an intense hostility, aversion, dislike, loathing, or sense of antipathy deriving from a sense of fear, anger, or injury (Merriam-Webster, 2009). Hate is usually directed externally (e.g., toward an object, person, or group of people), although sometimes it is directed inward, toward the self. In psychoanalytic terms, hate is addressed primarily in interpersonal (usually family) contexts. In social psychology, hate between groups is considered a particular topic of interest, as in racism, prejudice, hate crimes, and genocide. Hate has been described as a stable (enduring) personality trait, a motivation, and as a sentiment or framework for orienting one's life. As an emotion, hate has often been contrasted with love. However, love and hate do not appear to be mutually exclusive, nor are they opposite. One can feel love and hate for another at the same time (this is known as a love-hate relationship). Like love, hate has a target.

As an emotion, hate has been described as transient (fleeting); it has been described as combinations of other negative emotions such as anger, contempt, disgust, and fear (Rempel & Burris, 2005). Sigmund Freud believed that humans have a death instinct (Thanatos). Thanatos—a fascination with one's own or others' deaths—has been proposed as a cause of hateful acts (e.g., terrorism, genocide). Other theorists have explained hate crimes and extreme acts of violence using the concept of evil. American psychologist Robert Sternberg posits a triangular theory of hate, with three components: negation of intimacy, passion, and decision-commitment (2003). Hate can be captured by feelings or by actions. Negation of intimacy, manifested by seeking to create distance between oneself and the target of the hatred, is accompanied by feelings of repulsion and disgust. The passion component of hate is expressed as intense anger or fear in response to a perceived threat or violation. Decision-commitment, motivated by feelings of contempt, is characterized by thoughts of devaluation of the [illegible] object. Those who foment this type of hatred portray members of other [illegible]ups as subhuman (Sternberg, 2003).

According to Rempel and Burris (2005), there are several types of hate, including sadism, mutiny, tethering, denigration, redress, and nihilistic hate. In *sadistic hate*, causing another to suffer elicits excitement or pleasure. The process of hurting or torturing another may be done as part of thrill seeking or to elicit excitement (as in some cases of serial killing). Sadistic hate is acted out against a nonconsenting other person. *Mutiny* is a type of hate that is prompted by a sense of resentment or feeling of being trapped. Usually a result of a dependent relationship, the goal of mutiny is to assert autonomy. *Tethering* means disabling another through physical, financial, or psychological means. Tethering may occur in the context of domestic violence, when the abuser attempts to assert control over the victim. The ultimate goal of tethering—done out of a fear of abandonment or loss—is to secure a relationship. Acts of *denigration*, prompted by feelings of envy or contempt, are done to elevate the self (by putting down or keeping down another). Denigration occurs when there is a perception of competition such as gaining parental approval, job promotion, or social status. Group denigration may occur (in the form of racism, discrimination, or hate crimes) in economically stressed environments, when members of another group are perceived as unfairly taking limited jobs or educational opportunities. *Redress* is another word for revenge or retribution. Redress is grounded in human notions of fairness and justice, including beliefs that members of one's own group are deserving or entitled to good things. When bad things happen to oneself (or a member of one's family or identified group), a sense of anger, unfairness, injustice, violation, or disgust ensues. The goal of redress is to restore order and justice by exacting revenge or punishment. *Nihilistic hate* is motivated by feelings of loathing and a desire to harm, diminish, or destroy another. Nihilistic hate is considered overkill, or out of proportion to acts that are committed out of a desire to restore order or justice (e.g., redress). For example, destructive, violent acts such as extreme forms of road rage (e.g., pursuing or shooting other drivers) and going postal (e.g., shooting coworkers in one's place of employment) go well beyond behaviors that might be thought of as redressing perceived wrongs (Rempel & Burris, 2005).

See also aggression, anger, contempt, disgust, hate crimes, postal, prejudice, road rage.

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Hate Crimes

Hate crimes are crimes of aggression—for example, assault, murder, threats, or vandalism—that are directed against a group of people because those people are different from the perpetrator. A hate crime may involve many victims such as the mass murder of five Southeast Asian children and injury of 32 additional children in Cleveland

Elementary School in Stockton, California, in 1989 by 23-year-old Patrick Purdy, a man who blamed his inability to get a job on the Asian immigrants in his community. Purdy had attended Cleveland Elementary as a child, when it was predominantly white, and by the time he was an adult, his community had transformed to become predominantly Asian. Alternatively, a hate crime may involve only one victim, for instance, the 1998 murder of 21-year-old Matthew Shepard, a gay University of Wyoming student who was beaten to death by two classmates.

The actions that constitute hate crimes (e.g., murder, assault, vandalism) are illegal independent of whether the victim(s) belong to any particular ethnic, religious, or other group. However, nearly every state recognizes hate crimes as a special category of crime and has either created special hate crime statutes or has penalty enhancements to existing statutes if the crime committed is determined to be a hate crime. The specific groups that are protected under hate crime statutes vary greatly from state to state. For example, most afford protection for racial groups, ethnic groups, and religious groups, while fewer cover sexual orientation and disability as groups requiring protection; even fewer recognize that protection is required based on age or sex.

Levin and McDevitt (1999) discuss four reasons why hate crimes are treated differently than other crimes. First, hate crimes have large groups of people as targets, even if only one person is technically the victim of a particular instance of crime. Hate crimes have the potential to terrorize an entire group because they are at least in part motivated by the fact that the perpetrator (or perpetrators) believes that the victim is different from him. In a way, the murder of Matthew Shepard was not the murder of a person—the perpetrators did not see him as an individual human being with humanity and rights, but rather Shepard's murder was an attempt to terrorize and harm a whole group. In committing the crime the perpetrators intended to send a message to a group (in this case, gay men) that they were not welcome.

A second distinguishing feature of hate crimes is that the quality for which the victim is being attacked (e.g., sexual orientation or race) is usually an intrinsic characteristic that cannot be changed, such as race, age, or disability, or that would be extremely difficult and personally disruptive to change, such as religious affiliation. Therefore, if an individual is targeted because she is over 80 years old, there is nothing she can do to prevent being targeted. Or if an individual is attacked because he is a Catholic, even if he changed his religion (which no one should have to do to avoid discrimination), he still could not change the perpetrator's perception that he is Catholic. This lack of control that victims have over their own characteristics and the perceptions that others have of them leaves them feeling extremely vulnerable.

A third distinctive characteristic of hate crimes is that from the point of view of the perpetrator, the victim is typically interchangeable with other victims belonging to the same group; that is, in most cases, the perpetrators do not target a particular individual, or even if they do, another individual from the same group will suffice if they are prepared to commit a crime and the original target is unavailable. Sometimes perpetrators will even find victims belonging to a different group if they cannot find a member of the group they set out to victimize. So if they cannot find a Latino, they may seek out a Jew or someone who is gay. A fourth difference is that hate crimes tend to be more aggressive than crimes of the same nature that are not motivated by hate. For instance, Levin and McDevitt (1993) reported that assaults

in Boston that were hate crimes were three times more likely to result in hospitalizations for the victims than assaults that were not motivated by hate.

Levin and McDevitt (1999) have identified three categories of hate crimes based on the motivational origins of the crimes: thrill, defensive, and mission. The most common types, thrill crimes, are typically committed by teenaged boys or young adult men. They are committed for entertainment value, to impress their friends, to feel a part of a group, or for any combination of these reasons. Many of these crimes are property crimes, such as vandalism, although they may rise to the level of vicious assaults or murder. Defensive crimes are committed with the intention of protecting one's community (e.g., one's neighborhood, school, or workplace) from people who are perceived to be interlopers or outsiders. One example of this type of crime occurs when a member of a different race or religion moves into a neighborhood or school that was previously all one group (usually white). These could be property crimes or attacks on persons. The third category—the least common—is the mission offense, usually perpetrated by an organized hate group such as the Ku Klux Klan or Aryan Nations. Many of the organized hate groups have broad networks of people to call on. They train people in intimidation tactics and acts of violence, including the use of weapons. They have clear ideologies that are communicated to members and potential recruits. Their influence extends beyond their official members. Teenagers, young adult men, or others can be motivated by their ideologies and may receive support from the group in various forms, including training and loans of weapons. Usually, mission crimes are committed by groups of people; they are uncommonly committed by a single individual.

The hate crime is a serious social issue, and research and theory addressing hate crimes is voluminous. Levin and McDevitt (2002) have written a book in which they describe the different types of hate crimes, motivations for hate crimes, laws, prevention, and other topics.

See also aggression, ethnocentrism, hate, prejudice, stereotype.

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Hedonism

Hedonism refers to a philosophy positing that people are motivated by the seeking of pleasure and the avoidance of pain. It assumes that pleasure and pain are the major motivating forces in human behavior. As a result, people often learn to approach pleasurable situations and learn to avoid painful situations. Hedonism is implicated in such a saying as "I do it because it feels good."

Throughout human history, hedonism has been used to explain behavior. Democritus, an ancient Greek philosopher who was born around 460 BC, maintained that we behave in pursuit of pleasure. Epicurus, another ancient Greek philosopher, argued that we are motivated to attain pleasure. Many other prominent philosophers have applied hedonism in their doctrines. Herbert Spencer, a 19th-century English philosopher and sociologist, suggested that pleasurable behaviors are adaptive and typically have survival values for organisms. In the field of psychology, Sigmund Freud contended that anticipated pleasure and pain are the fundamental motivation of all actions. In his view, hedonic principles account for behaviors; we often need not consider the role of thought processes in motivation. B.F. Skinner's behaviorism is essentially a hedonistic theory; according to Skinner, organisms are motivated to seek "reinforcement" and avoid "punishment."

Hedonism as motivation does not necessarily mean that individuals do only what feels good in the moment. Being motivated by hedonism could mean that the pleasure sought or the pain avoided could be anticipated—that is, an individual is behaving in such as way as to increase pleasure or decrease pain in the future or over time.

Despite the widespread acceptance of hedonism as an explanation for motivated behavior, some have argued that pleasure does not necessarily increase the likelihood of a response (behavior), nor does pain necessarily decrease the likelihood of a response. In case of reward or pleasure, sometimes the expectation of reward for an intrinsically motivated behavior can deteriorate the initial interest in the behavior (e.g., Bradley & Mannell, 1984). In addition, hedonism has been criticized for its limited explanations for certain types of behaviors, for instance, altruistic behaviors and mastery-guided behaviors (e.g., Sober & Wilson, 1998).

See also desire, the Epicureans, Sigmund Freud, motivation, pleasure, B.F. Skinner.

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Herbert Spencer is famous for coining the term *survival of the fittest*.

Helplessness. *See* **Learned Helplessness.**

Hippocampus

Located in the medial temporal lobe in the brain, the hippocampus is involved in the formation of memory and spatial navigation. In the study of memory, one way that researchers have learned the role of the hippocampus is from brain-damaged patients. For example, H. M.—a patient suffering from severe epileptic seizures—underwent surgery that caused him to lose about two-thirds of his hippocampus, the amygdala, and some cortex in his temporal lobe. As a result of the surgery, H. M. experienced severe memory impairment despite his recovery from epileptic seizures and his normal functioning in other mental processes. His primary impairment was *antereograde amnesia* (an inability to form new memories). Additionally, he suffered partial *retrograde amnesia* (a loss of memory of some events prior to the surgery).

The hippocampus is involved in formation of some types of memory and not others. Episodic or autobiographical memory (memory of events) is affected by hippocampal damage. However, hippocampal damage does not affect the ability to learn new skills such as bike riding or typing (called procedural memory); this type of memory formation is associated with other brain areas. Researchers debate whether the hippocampus plays a role in formation of semantic memories (memories for facts). In H. M.'s case, semantic memory remained intact.

The hippocampus also specializes in forming association between cues or events. This system enables us to learn and memorize the relationships among objects in an environment (e.g., Eichenbaum, Otto, & Cohen, 1992; O'Keefe & Nadel, 1978). For instance, when we think of coffee, we are reminded of its color, smell, taste, and the location and the time we had it last time. The hippocampus is involved in routing different types of memories to different storage locations in the brain.

The hippocampus has been implicated in spatial navigation. Studies with rats have shown that the hippocampus has place cells that fire in response to a specific location within an environment. Following this discovery, some researchers have suggested that the hippocampus functions as a cognitive map, a neural replica of the spatial arrangement of an environment (e.g., O'Keefe & Nadel, 1978).

In separate but related theories in the 1930s through the 1950s, Papez and MacLean proposed that the hippocampus—along with other brain structures such as the hypothalamus and amygdala—was one of the primary brain structures involved in emotion (MacLean, 1949; Papez, 1937). Most researchers now believe that the hippocampus plays a relatively minor role in emotion. Many argue that the hippocampus is related to emotion primarily (or only) through its broader memory function; the hippocampus aids in the formation and consolidation of emotional memories (e.g., Kilpatrick & Cahill, 2003).

See also limbic system.

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Henry Gustav Molaison (1926–2008), the patient who underwent radical brain surgery in 1953 for severe epilepsy, was known for many years by his initials, H. M. In a 2007 interview on National Public Radio (NPR), Brian Newhouse explained how scientists are still learning from H. M. about how the brain processes different types of memory. Because of his severe epilepsy, H. M. was unable to hold down a job; although he was intelligent, he graduated late from high school. The operation, which removed much of H. M.'s medial temporal lobe (including the amygdala and most of the hippocampus), helped decrease H. M.'s seizures but left him with anterograde amnesia—an inability to form new memories. In the 2007 NPR interview, H. M. was unable to recall what he had for lunch that day, what he had done the previous day, or the name of the president of the United States. His severe amnesia made it nearly impossible for H. M. to have a normal life, including holding down a job or having friendships. While H. M. could not form new memories, his childhood memories (including the stock market crash of 1929) were still intact (Newhouse, 2007). After the surgery, H. M. lived with his parents, then another relative. At age 54 he moved into a nursing home in Connecticut, where he died at the age of 82 (Carey, 2008).

Histrionic

To be histrionic is to be overly theatrical and dramatic. Histrionic behavior is designed to impress and is typically insincere. The main psychological disorders in which histrionic behavior is present are histrionic personality disorder and, to some extent, borderline personality disorder.

Personality is a long-standing pattern of behavior and inner experience, including characteristic thoughts and emotions. A personality disorder may be present when the following criteria are met: the personality pattern differs significantly from the expectations of the individual's culture in at least two of the following four areas: cognition, emotional response, interpersonal functioning, and impulse control. The pattern is inflexible and generalized across a variety of personal and social situations.

Impairment in social or occupational functioning or significant distress, or both, are present. The pattern is long-lasting, persistent, and originated in early adulthood or earlier.

Histrionic personality disorder, as described in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), is a pattern of attention seeking and extreme emotionality that is present by early adulthood and expressed in a variety of situations and contexts. Individuals with histrionic personality disorder present with at least five of the following symptoms: (1) discomfort in situations in which they are not the center of attention; (2) sexually seductive or provocative behavior when interacting with others; (3) rapidly changing and shallow emotional expression; (4) consistent use of physical appearance to garner attention; (5) style of speech that is impressionistic and undetailed; (6) theatrical, dramatic expression of emotion; (7) easily influenced; and (8) views relationships as closer in intimacy than others view them. Leading theories on the origin of histrionic personality disorder derive from psychodynamic (Freudian) and cognitive perspectives on abnormal behavior. Most psychodynamic theorists, who focus on childhood relationships as causes of disorders, believe that individuals with histrionic personality disorder had cold, controlling parents who left their children feeling unloved and fearful of abandonment (e.g., Gunderson, 1988). These individuals learned to behave in a dramatic fashion, inventing emergencies to solicit attention and protective behavior from others that may lead them to feel loved, at least temporarily. Cognitive theorists focus on the way these individuals perceive the world and why their perceptual styles exist in their form. According to such theorists (e.g., Hollender, 1988), people with histrionic personality disorder are so self-absorbed and emotional that they are unable to attend much to the external world. They learn less about the world than other people do and in the present moment must look to others to interpret events and other people's behavior. They feel helpless and continuously seek people who will protect them and satisfy their needs. Treatments for histrionic disorder are moderately successful and primarily include psychodynamic and cognitive forms of individual psychotherapy and group psychotherapy.

People with borderline personality disorder (BPD) exhibit persistent instability in mood, interpersonal relationships, and self-image and engage in frequent impulsive behavior. People with BPD have emotional lability (mood swings) accompanied by episodes of anger, depression, and anxiety, lasting anywhere from a few hours to a few days; they are also prone to physical aggression and impulsivity. They tend to direct their anger inward, leading to a high rate of self-injury. Self-destructive behaviors in individuals with BPD include substance abuse (e.g., drugs or alcohol), binge eating, unsafe sex, reckless driving, and self-cutting. Past research indicates that 60 to 80 percent of people with BPD have attempted suicide at least once in their lifetimes, while 10 percent of them die of suicide (James & Taylor, 2008). Risk factors for people with BPD completing suicide include those with comorbid major depressive disorder, antisocial personality disorder, those who are older with children, those who have less education, and those with a family history of substance use (Soloff, Fabio, Kelly, Malone, & Mann, 2005). Many of those with BPD suffer from deep feelings of emptiness, boredom, and confusion about their identity.

Histrionic behavior may occur in individuals as within a normal range. It may also exist as a symptom or symptoms of behavior or mental process patterns that have been

identified as abnormal, particularly as exhibited in histrionic personality disorder. Histrionic behavior thus sometimes requires psychological treatment and other times is simply a part of an individual's unique expression of his personality.

See also borderline personality disorder, egomania, personality disorder.

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Hope

Hope is similar to optimism, and the two concepts have not always been clearly distinguished. A leading modern thinker about hope has been American psychologist C.R. Snyder, who published *hope theory* in the 1990s. Snyder argued that hope is different from optimism in that hope is more specific and includes a plan—"goal-directed thought"—whereas optimism is a more general positive attitude. Hope involves two specific types of thinking: *pathways thinking* (one's perceived ability to find paths to desired goals) and *agency thinking* (one's motivation to utilize those paths). Thus hoping implies the existence of goals, pathways, and agency.

The goals involved in hope may be short- or long-term. They may be approach- or avoidance-oriented, meaning that the aim may be either to achieve a goal that is desired or to prevent a circumstance that is undesired. Goals also vary in how difficult they are to achieve; some may be very easy and others quite difficult. An individual may recruit others in his hope-oriented behaviors, especially if the goal is difficult. Additionally, humans may possess collective hopes and work together to achieve their goals (i.e., working together on the campaign for a political candidate or working together to help prevent global warming).

High hopers, compared to low hopers, have more positive emotion and a better history of success in achieving their goals. When pursuing a goal, one may encounter frustrations—times when the path to the goal is blocked. The pathways thinking aspect of hope is associated with an ability to generate alternative routes when the original ones are blocked (Snyder et al., 1991). Agency thinking is associated with positive self-talk when a goal is impeded (i.e., "I can do this," "If I'm persistent, I will succeed"; Snyder, LaPointe, Crowson, & Early, 1998).

Snyder argues that hope is primarily taught rather than inherited. According to him, pathways thinking is acquired first and is based in fundamental cause-and-effect thinking. Agency thinking involves an individual seeing herself as a cause of her outcomes or experiences.

Snyder and his colleagues have found that hope predicts a number of positive outcomes for individuals in the realm of school achievement, athletic achievement, physi-

cal and psychological health, psychotherapy, and others (for a review, see Snyder, 2002). Snyder and colleague have written a number of books that describe his theory about the origins of hope and how-to instructions for enhancing hope, for example, *The Psychology of Hope: You Can Get There from Here* (Snyder, 2003) for adults and McDermott and Snyder's (2000) *The Great Big Book of Hope* for children.

See also motivation, optimism, positive emotions, positive psychology.

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Hopelessness

To be hopeless is to despair, to give up on any prospect of happiness, comfort, or success. Most people experience feelings of hopelessness at some points in their lives. Hopelessness, when it is extreme, persistent, or both, may also be a symptom of a mental disorder.

According to diagnostic criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), hopelessness is one of the symptoms of major depressive disorder (MDD) and dysthymic disorder. The *DSM-IV-TR* is the main diagnostic system for mental health disorders used in the United States. Symptoms of major depressive disorder and dysthymic disorder overlap, with MDD generally experienced as the more severe of the two and involving more symptoms, whereas dysthymic disorder is often more chronic. Hopelessness may also occur in episodes of depression associated with bipolar disorder (manic depression) and in other types of depression, including postpartum depression and seasonal affective disorder.

Hopelessness is a common theme in the arts. For instance, many poets have written haunting poems of hopelessness, including Americans Sylvia Plath and Langston Hughes, South African Peter Sacks, and Englishwoman Emily Bronte. In 2001, psychologists Stirman and Pennebaker, interested in the motivation behind the writing of particular types of dark poetry, compared use of words associated with depression and hopelessness in poets who were suicidal and poets who were not suicidal. They found no difference in word use in these two groups of poets.

See also artistic expression of emotion, bipolar disorder, dysthymia, major depressive disorder.

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Hormones

A hormone is a type of chemical messenger secreted by certain cells that affects cells in other parts of the body. Hormones are often transported in the blood. Humans (and other vertebrates) have three types of hormones: amines, peptides, and lipids. *Amines*, derived from the amino acids tryptophan and tyrosine, include catecholamines (adrenaline and noradrenaline) and thyroxine (a thyroid hormone). *Peptides* include insulin, growth hormones, testosterone, and cortisol (a stress hormone). The main *lipids* are steroids, derived from cholesterol and eicosanoids. Prostoglandins, which are involved in pain perception, inflammation, and hormone regulation, are a type of eicosanoid. Enkephalin is a hormone involved in pain regulation.

Hormones serve various functions, including regulation of growth, mood, hunger cravings, immune function, metabolism, pain, and the reproductive cycle. Hormones such as adrenaline and noradrenaline prepare the body for fight or flight (in response to a threat). Hormones also prepare the body for a new phase of life (e.g., puberty, pregnancy and childbirth, and menopause). Melatonin, found in the pineal gland, is an antioxidant that can cause drowsiness. Melatonin is sometimes used to regulate the sleep cycle (e.g., with jet lag). Serotonin is a hormone that affects mood, appetite, and sleep. Insulin and glucagon (both peptides) affect blood sugar. The peptide orexin affects wakefulness, appetite, and energy level. Oxytocin—sometimes referred to as the love hormone—is integral to the birth process, release of breast milk, and orgasm and has been implicated in building bonds and trust between people (Anderson & Middleton, 2006).

While testosterone is considered a male hormone and estrogen a female hormone, both males and females have some amount of both hormones. Testosterone is a steroid that increases muscle mass, strength, and bone density. Testosterone is involved in male maturation, including development of male secondary sexual characteristics (e.g., facial hair growth, deepening of voice). Testosterone levels in males may affect muscle mass, strength, energy level, sleep, sex drive (libido), concentration, memory, and mood. A decrease in testosterone levels due to aging is sometimes referred to as *andropause.*

Female steroids, including estrogen (estradiol) and progesterone, serve many functions. These include promoting the formation of female secondary sexual characteristics (e.g., breast development), supporting pregnancy, growth and metabolism, and maintenance of bone density. Estrogen levels in females may affect energy level and mood. Fluctuating levels of estrogen and other (e.g., serotonin and beta-endorphins) hormones may manifest as mood swings, depression, anxiety, or irritability at different points in the menstrual cycle (Dickerson, Mazyck, & Hunter, 2003). Depending on the pattern and severity of symptoms, women may be diagnosed with premenstrual syndrome (PMS) or premenstrual dysphoric disorder. Levels of female and other (e.g., thyroid and cortisol) hormones change dramatically after childbirth and may be associated with postpartum depression (Harris, 1996). Female hormones decrease with

age. When a woman's ovaries stop producing eggs and female hormone levels drop, her menstrual periods cease and she experiences menopause. While some women experience menopause symptoms, including depression, irritability, mood swings, decreased libido, sleep problems, night sweats, and hot flashes, many women have no symptoms (Liu et al., 2009).

Adrenaline (also known as epinephrine) prepares the body to fight or flee (escape) in response to a threat. An increase in adrenaline also increases heart rate, dilates blood vessels and pupils, suppresses digestion, and suppresses the immune system. High levels of chronic stress can repeatedly activate the adrenaline (fight-or-flight) system. This can result in repeated suppression of the immune system and may be associated with stress-related illnesses. Adrenocorticotropic hormone (ACTH) is often produced in response to stress. It increases the production of androgens (e.g., testosterone) and the stress hormone cortisol. Cortisol is a steroid that stimulates the breakdown of fat cells, has anti-inflammatory properties, and suppresses the immune system. Prolactin is a peptide hormone primarily associated with lactation (producing breast milk). Prolactin levels seem to increase with emotional crying. Some postulate that crying may have beneficial effects, including relieving stress and tension (Walter, 2006). Prolactin levels—as well as levels of noradrenaline, cortisol, and ACTH—have been shown to vary with the elicitation of different emotions (pleasant and unpleasant feelings; Codispoti et al., 2003). Levels of prolactin, ACTH, and cortisol all have been found to increase in response to stress. Greater stress reactivity may be associated with greater risk of developing alcoholism and increased subjective perception of stress in children of alcoholics (Uhart et al., 2006).

See also menopause, mood swings, neurotransmitter, postpartum depression, serotonin, stress hormones.

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Karen Horney (1885–1952)

Feminist psychoanalyst Karen Horney was born in Blankenese, Germany, in 1885. Her father, Berndt Danielson, was a sea captain and his mother, Clotilde ("Sonni"), was a housewife. Sonni was Berndt's second wife; Berndt had four children from his

previous marriage. Karen's half siblings were never accepting of the new family (Sonni, Karen, and brother Berndt), a source of some pain for Karen.

Karen had complex relationships with her family members. Her father was prone to angry outbursts, for which his children nicknamed him "Bible-thrower." He favored his son Berndt over Karen, believing that women were inferior to men in intelligence and morality. At the same time, he took Karen on some of his long sea voyages, and these memories were invaluable to Karen. Karen adored and looked up to older brother Berndt, but he did not return the affection in the same way, embarrassed by her open expressions. Her true emotional connection was with her mother, who protected her from her father and who supported her in her aspirations.

While growing up, Karen was unhappy. She was self-conscious, believed she was unattractive, and despised her life at home. At age 12, she was determined to become a medical doctor, an ambition that was virtually unknown for women at the time. Karen's father opposed her goal, but Sonni was able to convince him to pay for Karen's prep school. Karen entered medical school at the University of Frieberg, one of the only medical schools in Germany that admitted women, and was the only woman in her class. After transferring universities twice, she earned her medical degree in 1913 from the University of Berlin. She studied Freudian psychoanalysis in the later years of medical school. During the same years she also met and married Oskar Horney, an economics student who would later graduate from law school. Over the course of their marriage, they had three daughters.

Karen's adult family life mimicked her own childhood in some ways. Oskar was angry and sometimes physically abusive. One Christmas, at dinner, middle daughter Marianne leaned back in her chair and accidentally pulled the tablecloth and the entire dinner to the floor. Oskar beat her aggressively with a dog whip while older sister Brigitte cried in sympathy. Karen did not react emotionally. In a biography of Horney, Rubins (1978) reports that the daughters saw their mother as cold and detached. This is ironic as Karen's theory of personality would be built around the concept of *basic evil*, which is an attitude of aloofness and indifference that a parent has toward her child. Karen's marriage deteriorated over the next several years, and in 1926 she left Oskar, moving into a small apartment and taking the girls with her. Over 10 years later, she filed for divorce; their divorce became final in 1939.

Karen taught at the Institute of Psychoanalysis in Berlin from 1920 to 1932. In 1932, she and the children immigrated to the United States, settling in Brooklyn, where she became part of an active intellectual community. She practiced psychoanalysis and wrote extensively about personality and neurosis. Her 1937 book, *The Neurotic Personality of Our Time*, was well received and was even popular with the lay public. In 1941, she founded the Association for the Advancement of Psychoanalysis to promote an alternative to traditional psychoanalysis. She began teaching at New York Medical College in 1942 and remained there until her death in 1952.

Horney contributed much to the clinical conception of emotion. She described a concept, *basic anxiety*, which is a result of being ignored, mistreated, or abused by others in childhood, especially by parents. "It may be roughly described as a feeling of being small, insignificant, helpless, deserted, endangered, in a world that is out to abuse, cheat, attack, humiliate, betray, envy" (Horney, 1937, p. 92). This basic anxiety is not a universal experience but [illegible] Those who experience this feeling develop a defensive way of dealing with [illegible], a "neurotic personality" that is characterized

by "moving toward others" (viewing oneself as saintly; appeasing others and being compliant so that others will not hurt one), "moving against others" (viewing others as dangerous; attacking first before others attack), or "moving away from others" (viewing others as troublesome and demanding; avoiding others because they create hassles). The person with a neurotic personality, having this feeling of smallness and fear of others (basic anxiety), unconsciously chooses one of these three approaches and rigidly applies it in interactions with all people. In contrast, the person with a healthy personality views others in more complex and differentiated ways; this person is flexible in the ways that she relates to others.

Another significant contribution of Horney's was her feminist modification of Freudian theory. Horney, like Freud, believed that many young children experience a clinging possessiveness of one parent and jealousy of the other parent (because the other parent possesses the loved parent). These feelings can be quite passionate, but whereas Freud saw them as sexual, Horney did not. Instead, such a dynamic is an early sign of neurotic conflict; the child feels basic anxiety and hostility toward one or both parents because of their interference, indifference, or abuse. Additionally, as a counterpart to Freud's *penis envy* (girls' and women's envy of the powerful organ that is associated with great pleasure), Horney identified *womb envy*. In her psychotherapy practice, she claims that she saw men who envied pregnancy, childbirth, motherhood, and women's breasts. Her writings about feminine psychology, which were revolutionary at the time (1930s and 1940s), inspired others to challenge a masculine bias in traditional psychoanalytic theory.

See also anxiety, Sigmund Freud, psychoanalytic perspective, the unconscious mind.

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Human Development

While age ranges are often given for the development of behaviors and abilities in typically developing children, these are estimates based on studies of specific populations. When comparing a child's development to these estimates, it is important to consider individual differences, culture, family influences, and environment.

Newborn infants exhibit a limited range of emotional behavior. They show distress (marked by crying or irritability) when they need food or attention, attention (focusing on people and objects), and pleasure (satiation, contentment, relaxation, and response to tickling). By about three months of age, typically developing human infants begin to exhibit joy, showing excitement or happiness when confronted with familiar people. Three-month-old infants also exhibit sadness when positive stimuli are withdrawn (e.g., when their mothers stop interacting with them) and disgust (spitting out unpleasant-tasting objects). Anger appears to emerge between four and

six months of age, fear at seven or eight months, and surprise within the first six months (Lewis, 2000).

Some studies have found much earlier emergence of emotional *facial expressions.* While very young infants show facial expressions of happiness and surprise in response to happiness- or surprise-inducing stimuli, they do not consistently show fear expressions to fear-inducing stimuli until they are seven or eight months old. Brain research indicates that development of fear-related neural circuits depends on a certain level of social experience. A study of Hungarian infants showed that fear expressions develop later in boys (4.3 weeks of age) than girls (3.5 weeks of age; Nagy et al., 2001).

By the second half of the second year of life (18 to 24 months of age), the development of self-awareness promotes the emergence of self-conscious emotions: embarrassment, empathy, and envy. Between two and three years of age, children develop the ability to evaluate their behavior against a standard. The standard can be external (e.g., a teacher or parent praising or stating rules) or internal. This self-evaluation ability leads to the emergence of pride, shame, guilt, and regret. By the age of three years, typically developing children show almost the full range of adult emotions (Lewis, 2000).

Human infants have been observed to smile from birth. Typically developing infants usually engage in *anticipatory smiling*—smiling at an object then continuing to smile while gazing at a nearby person—between 8 and 12 months. Anticipatory smiling is a precursor to developing joint attention (coordinating visual attention between an object and a social partner), which is a crucial milestone in intentional communication (Venezia, Messinger, Thorp, & Mundy, 2004). The development of emotional understanding (of one's own and others' emotions) is closely tied to social relationships, language development, and early childhood experiences. The ability to understand others' intent and perspective, referred to as *theory of mind*, is a precursor to developing empathy and is part of social learning (Dunn, 2000).

See also facial expression, smiling, social learning, theory of mind.

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Human Life Span

There are many theories about development across the human life span. Some of these describe progressive, hierarchical phases or stages: the infant starting from an automatic, irrational, unconscious, [illegible] emotional system [illegible] arriving meaning—about

itself, the world, and its place in the world—and progressing to a more enlightened, mature state that is relatively rational, conscious, and deliberate, with symbolic and conceptual cognitive processes most often overriding emotions. For example, in 1957, Sigmund Freud discussed primary (primitive, infantile) processes and secondary (adult, mature) processes (Lazarus, 1991). Swiss psychologist Jean Piaget (1926) formulated a theory about sequential cognitive development occurring in four stages. The infant (aged zero to two years) is at the *sensorimotor* stage, experiencing the world through movement and senses. The *preoperational* stage (two to seven years) is marked by magical thinking and egocentrism (the tendency to perceive and understand the world in terms of oneself). At the *concrete operational* stage (7 to 12 years), children begin to think logically but are still very concrete in their thinking. The *formal operational* stage (aged 12+) is marked by abstract thinking (Ivey, Ivey, Myers, & Sweeney, 2005).

American psychologist Abraham Maslow (1943) described humans as having a hierarchy of needs: as needs are met at basic levels (e.g., food, shelter, security), the individual is motivated to meet needs at higher levels (e.g., love, belonging, esteem). Throughout the life span, the individual moves through the hierarchy of needs toward self-actualization. Danish-German-American psychologist Erik Erikson described eight stages of the human life cycle, from infancy through old age. According to Erikson (1950), each stage has its own unique tasks that may prompt a *developmental crisis*: resolution of the crisis being necessary to achieve maturity at the next stage. The main task of infancy (zero to two years) is *trust versus mistrust*. Failure to develop trust during infancy will affect all future attachments and relationships. Early childhood (two to four years), which Erikson termed *autonomy versus shame and doubt*, holds a critical separation task, in which the child finds a unique personal space among demands imposed by family and culture. In the preschool stage (four to seven years), the child begins to direct its own life. In elementary school (7 to 12 years), the child's task is developing a sense of competence and capability. The task of adolescence (12 to 19 years) is to find a separate identity, while the young adult (aged 19 to 30) establishes intimacy with others. The middle adult (aged 30 to 60) experiences a need to give back to children and society. The task of the mature adult (aged 60+) is to be able to accept failures and successes and integrate them into a meaningful life pattern. Stages may prompt specific developmental crises. Adolescents seeking to find their own identity might experience an *identity crisis.* Adults in their middle years might experience a *midlife crisis*—a period of self-doubt and reevaluation of life goals as one senses the passing of youth (Ivey et al., 2005).

American developmental psychologist Jane Loevinger (1976) described 10 stages of ego development, each of which provides a frame of reference to give meaning to experience over the course of a lifetime. The child starts out impulsive, moving through a self-protective, conformist stage toward a self-aware, conscientious, autonomous adult ego stage. American psychologist Lawrence Kohlberg (1981) saw humans as moving progressively through six stages of moral development: from a morally immature orientation focused on obedience, fear of punishment, and self-interest toward a more principled, ethically grounded moral stance (Ivey et al., 2005)

Stage theories have been criticized as suggesting that the human life span has distinct, sequential, nonoverlapping life stages. While some tasks are more prominent in certain stages, all developmental tasks exist throughout the life cycle (Ivey et al., 2005). Many factors influence the development of e[illegible]on over the life sp[illegible]luding

early relationships with the primary caregiver, temperament, biological factors, parenting style, learning, socialization, culture, and the environment (Lazarus, 1991). British psychiatrist John Bowlby proposed that attachment—the early bonds between a baby and its primary caregiver (parents and others who care for the baby)—consolidates during early childhood and generates templates for future relationships (Magai, 2002). American developmental psychologist Mary Ainsworth demonstrated that caregiver behavior, and whether a child is securely or insecurely attached, can have significant, lasting effects on individual development. For example, infants who are more securely attached to their primary caregiver during the first year of life may experience more positive emotions and less fear than infants who are insecurely attached, even into adulthood (Ivey et al., 2005).

Charles and Carstensen (2006) discuss the development of emotional regulation and emotional well-being across the life span. As children and adolescents develop, they acquire abilities to control their impulses and become more aware of themselves and others. They also become more effective at describing and regulating their emotions. The human brain continues to mature, and neurological functions related to emotions continue to develop throughout an individual's adolescence. While earlier theories of aging and emotion posited that emotional well-being peaked in the early twenties and declined thereafter, newer research has dispelled this notion. Negative affect (emotion, feeling) is reported at a lower rate in older adults, as compared to younger and middle-aged adults. The exception to this is when an individual has functional limitations or chronic illness. Older adults report experiencing more positive affect than younger adults, and life satisfaction ratings are about the same for people in their eighties as for those in their forties. While physiological decline is an inevitable part of the aging process, research has shown that shifts in cognitive processes (e.g., compensation, adaptation through life experience) can offset physiological declines. So even though physical functioning peaks earlier in life, emotional functioning is maintained well into the later years (Charles & Carstensen, 2006).

See also Mary D. Salter Ainsworth, attachment, John Bowlby, developmental crisis, human development, Abraham Maslow.

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Humanistic Psychotherapy

Humanistic psychotherapy is a collection of psychotherapy approaches that originated in the 1940s and 1950s. Examples of therapies that include fundamental humanistic values are Carl Rogers's client-centered therapy, existential therapy, Victor Frankl's logotherapy, and Gestalt therapy.

Humanistic psychology was a reaction to two movements in psychology that were viewed by the new humanists as highly deterministic: Freudianism and behaviorism. Humanists see people differently than do Freudians or behaviorists. To a humanist, people are not products of their unconscious minds, their pasts, or their environments; rather, people possess free will and self-determination. People are naturally motivated to achieve their own unique potentials, possessing drives for self-actualization. Additionally, humanistic psychologists do not see people as component psychological processes such as cognitions, motives, and emotions. Instead, they perceive people as integrated wholes, unique human beings with intrinsic worth and dignity. Although many humanistic psychologists are scientists, they oppose the positivistic determinism of many approaches to science, with the nearly exclusive focus on laboratory experiments and the study of nonunified components of human experience and existence. The basic values of the humanist have been expounded by a number of psychologists, including Maslow (1962), Buhler (1971), and Buhler and Allen (1971).

Techniques used by humanistic psychotherapists vary with the particular form of psychotherapy. More precisely, compared to other psychotherapy approaches such as psychodynamic or cognitive-behavioral therapy, humanistic therapy is relatively nontechnique-centered. For instance, Rogers's client-centered therapy focuses most on creating the appropriate climate in therapy, with the therapist conveying unconditional positive regard, empathy, and genuineness, rather than on technique per se. The goal of humanistic psychotherapy is to aid the client in becoming a "fully functioning person" (Carl Rogers's expression). Although research on the effectiveness of therapy is difficult, especially when the measured outcome is fairly vague (e.g., becoming a "fully functioning person"), Rogers and his adherents attempted to demonstrate psychotherapy success through research. In one study, Butler and Haigh (1954) showed that clients' descriptions of their "real selves" (ways they viewed themselves) and their "ideal selves" (ways they wished they were) aligned more closely after Rogerian therapy than before.

Humanistic therapy still exists as a treatment alternative, although other approaches (e.g., cognitive-behavioral, behavioral) are now more popular. Humanism, as a philosophy in psychology, is alive and well. It has additionally enjoyed a rebirth in the (altered) form of positive psychology, which endeavors to understand the good life and the best in people through application of the scientific method. Positive psychology was initiated as an academic field in 1999, when the first positive psychology course appeared at a university, and has grown rapidly in just a few years; by 2007 over 200 positive psychology course were offered, largely at American and European universities.

See also behaviorism, client-centered therapy, encounter group, existential psychotherapy, experiential therapy, Viktor Frankl, Gestalt therapy, logotherapy, Abraham Maslow, positive psychology, psychoanalytic perspective, Carl Rogers.

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Hypnotherapy

Hypnotherapy is a treatment modality utilizing specific techniques while the patient is in a state of hypnosis. *Hypnosis* is a state of heightened concentration in which a motivated person may experience altered sensations and perceptions and may be more receptive to suggestions from a therapist. The term *hypnosis* comes from the Greek root *hypnos* (sleep). *Self-hypnosis* is a technique an individual can learn to reinforce desired emotional or behavioral changes. Hypnosis is a therapeutic tool, not a therapy in itself; it is often used in conjunction with other types of therapy (e.g., cognitive-behavioral therapy). Hypnotherapy has been used to treat a variety of conditions, including anxiety disorders (e.g., panic disorders, general phobias, social phobia, generalized anxiety disorder), posttraumatic stress disorder (PTSD), obsessive-compulsive disorder, Tourette's syndrome, depression, eating disorders, attention-deficit hyperactivity disorder, chronic pain, asthma, and irritable bowel syndrome. Hypnosis has been used as anesthesia, in both surgical and dental procedures.

German physician and astrologer Franz Anton Mesmer (1734–1815) utilized a force he called *animal magnetism* to heal people. It was thought that all elements in the universe, including the human body, were interconnected through a magnetic fluid. Disease resulted from an imbalance of this fluid. The physician served as a conduit to channel animal magnetism from the universe into the patient's body. The process, known as mesmerism, was initially popular. In 1784, French King Louis XVI appointed commissioners from the Faculty of Medicine and the Royal Academy of Sciences to investigate animal magnetism. The commission concluded that any healing effects of mesmerism were due to imagination. Scottish neurosurgeon James Braid (1795–1860) is considered the father of hypnotherapy. Braid was influenced by the demonstrations of Mesmer. The term *hypnotism* (short for *neurohypnotism*)—as used in the sense of inducing a trance—was coined by Braid in 1843. French neurologist Jean-Martin Charcot (1825–1893) believed that hysteria (a neurosis of the brain or emotional disorder) was a neurological disorder. He performed experiments using hypnosis to induce a state of hysteria in patients. Charcot described the somatic (physical) effects of hypnosis as occurring in successive stages and claimed that somatic manifestations could be transferred from one side of the body to the other utilizing magnets. French physician Hippolyte Bernheim (1840–1919) disagreed with Charcot's explanations. Bernheim conceived of hypnosis as a normal state of mind in which suggestion plays an essential role (Wozniak, 1995). While Charcot focused on the physical and neurological aspects of hypnosis, Bernheim emphasized the power of suggestion. Mesmer believed that a force within the hypnotist was responsible for the effects of hypnosis; however, Bernheim posited that the power of

suggestion and expectation within both the patient and the hypnotist was responsible for hypnotic effects.

In the 1840s, hypnosis was used as surgical anesthesia in England and India. However, with the advent of chemical anesthesia, hypnosis fell out of favor with the medical establishment (James, 2008). As a psychiatric treatment, hypnosis was used in World Wars I and II to treat battle fatigue (now known as PTSD) so that soldiers could return to battle (Zahourek, 2002).

American psychiatrist Milton Erickson (1901–1980) practiced a unique form of hypnotherapy. Ericksonian hypnosis was based on three approaches he referred to as *naturalistic*, *utilization*, and *indirect.* His approach incorporated the waking trance. The *naturalistic* approach utilizes memories of early learning while in a trance state. The *utilization* approach accepts and appreciates the client where he is. The client may be as receptive to suggestion in a waking trance as in a deep trance state. Trance is a changed state of awareness or consciousness that varies naturally and continuously. A light trance is a common experience, for example, losing track of time and place when completely absorbed in a good book. A deep trance is not considered necessary in Ericksonian hypnotherapy (Zahourek, 2002). The *indirect* approach is less authoritarian or directive as traditional forms of hypnosis. Using a directive approach, a hypnotherapist might suggest to a client "relax," "stop smoking now," or "remember a time when you felt in control." An indirect approach is framed positively and is less specific, allowing room for interpretation. For example, "you may find you are increasingly comfortable." Ericksonian hypnotherapy influenced the development of many other therapeutic modalities and techniques, including family therapy and group therapy. Neurolinguistic programming (NLP), which emerged in the 1970s, was an approach utilizing Erickson's ideas. NLP, which was loosely based on Ericksonian hypnotherapy, has been used in employee training (Maron, 1979).

While similar in some ways to relaxation, imagery, and biofeedback techniques, hypnosis differs in the timing and manner with which suggestions are introduced (Zahourek, 2002). Myths about hypnosis include a fear of loss of control, doing or revealing embarrassing things under hypnosis, or being under the control of the hypnotist. These are common misperceptions that are perpetuated by stage hypnosis, which tends to be sensationalist and is performed for entertainment. Being in a hypnotic trance cannot cause someone to violate her values, morals, or ethical code or to reveal information against her will (Appel, 2002).

In hypnotherapy, the therapist learns about the client's background, culture, learning style, strengths, goals, and desires. A diagnostic assessment is performed to determine which therapeutic techniques (including hypnosis) will be most effective. If the client is motivated to try hypnosis, the process is explained to the client. During hypnotic induction, the therapist observes the client's attention, focus, and breathing to assess the depth of the client's trance state. The therapist may introduce direct or indirect suggestions that are in line with the client's stated goals and values. Suggestions generally reinforce the client's internal resources, drawing on examples of past successes and positive interactions. Posthypnotic suggestions form a bridge so that the client can transfer feelings and states experienced during the trance state into future behaviors, thoughts, and feelings. The therapist's tone of voice, rhythm of speech, and body language can reinforce suggestions given during hypnosis (Zahourek, 2002).

Research, often based on small sample sizes or case studies, has made it difficult to establish the effectiveness of hypnotherapy for mental health issues. There has been more research establishing effectiveness of hypnosis for treatment of physical issues such as pain and irritable bowel syndrome. Children seem to respond more readily to hypnosis than adults (Huynh, Vandvik, & Diseth, 2008). As hypnotherapy seems to demonstrate beneficial effects in a shorter period of time (fewer sessions) than traditional psychotherapy, incorporating hypnotherapy into a treatment plan can save time and money—both for the patient and in the context of managed care (or limited health care resources). Many different types of professionals can be trained to utilize hypnotherapy, including psychologists, psychiatrists, clinical social workers, nurses, physicians, surgeons, and dentists.

See also altered states of consciousness, anxiety, cognitive therapy and cognitive-behavioral therapy, depression, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, phobia, posttraumatic stress disorder.

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American Society of Clinical Hypnosis Web site: http://www.asch.net/

National Council for Hypnotherapy Web site: http://www.hypnotherapists.org.uk/

UK College of Hypnosis and Hypnotherapy Web page about James Braid: http://www.james-braid.com/

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Hypothalamus

Located below the thalamus in the brain and immediately above the brain stem, the hypothalamus is involved in the control of metabolic processes and control or initiation of a wide variety of behaviors, including eating, drinking, sex, sleep, stress responses, anger and fear reactions, and other behaviors. Nuclei (clusters of nerve cells) in the hypothalamus are linked with the autonomic nervous system (ANS), the limbic system (other brain structures), and the endocrine system (system of glands in the body) by direct nerve connections and neurohormonal secretions. Through these links, the hypothalamus regulates many behaviors, including those governed by the two branches of the ANS: the sympathetic and parasympathetic nervous systems.

By triggering either the sympathetic (stress) or parasympathetic (vegetative) response, the hypothalamus attempts to meet the needs created by changes in the external environment or to maintain a balanced (homeostatic) state. For instance, one's

blood pressure is adjusted depending on whether one is sleeping or jogging. The hypothalamus synthesizes and secretes hormonal substances that are transmitted to the pituitary gland (the master gland in the body, located directly below the hypothalamus). When the pituitary gland is stimulated, hormones are released into the bloodstream, leading to a variety of bodily changes.

The hypothalamus is involved in emotional behaviors. In a study utilizing cats as subjects, Bard and Macht (1958) detached different parts of the brain and observed the associated behavioral reactions. They concluded that the hypothalamus was the part of the brain that was primarily responsible for organizing rage/attack behaviors; with a detached hypothalamus, cats would still show elements of rage behaviors but would not produce the constellation of reactions that are called *rage*. Wasman and Flynn (1962) demonstrated that different types of emotional behaviors could be produced by electrically stimulating different nuclei within the hypothalamus of cats. Specifically, stimulation to the medial (central) nuclei of the hypothalamus elicited vicious attack behavior in cats, while stimulation to the lateral nuclei of the hypothalamus elicited unemotional quiet-attack behaviors (e.g., a quiet, biting attack).

The hypothalamus is also known for its functions in times of stress. Hess (1954) showed that electrical stimulation of the posterior (rear) hypothalamus produces sympathetic (stress) responses and that electrical stimulation of the anterior (front) hypothalamus produces parasympathetic (relaxed, vegetative) responses. In everyday, stressful situations, the hypothalamus causes the release of stress hormones through the adrenal glands (located above each kidney). The hypothalamus causes this release both through direct neural connections with the adrenal glands and by sending messages to the pituitary gland, causing the pituitary to release hormones into the bloodstream.

See also autonomic nervous system, parasympathetic nervous system, stress, stress hormones, sympathetic nervous system.

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Insula

The insular cortex (also known as the insula) is part of the cerebral cortex. It lies between the temporal and parietal lobes of the brain. It was first described by Johann-Christian Reil (1759–1813) in 1796 and later became known as the Island of Reil (Binder, Schaller, & Clusmann, 2007). The insula plays a role in functions linked to emotion and to regulation of the body's homeostasis (balance). The insula is thought to contain representations of external sensory and internal bodily states, incorporating information from visceral (guts), olfactory (smell), gustatory (taste), visual, auditory, and somatosensory (feeling) inputs (Beauregard, 2003). The insula is active in perception, motor control, and self-awareness.

Neuroimaging studies—such as functional magnetic resonance imaging and positron emission tomography scans—have yielded insight into the role of the insula. Research has implicated the insula specifically in the emotion of disgust. However, the insula is also activated with other basic emotions such as happiness, sadness, and fear. It can be activated by emotional recall as well as real-time experiencing of emotion (Phan, Wager, Taylor, & Liberzon, 2002). The insula is involved in the experiencing of social emotions, including admiration of virtue, feelings of compassion for social or psychological pain, and moral indignation (Immordino-Yang, McColl, Damasio, & Damasio, 2009). Anxiety-prone research participants had greater insula activation when shown pictures of emotional faces than did participants with lower anxiety (Stein, Simmons, Feinstein, & Paulus, 2007). The insula is activated during tic initiation in individuals with Tourette's syndrome (Lerner et al., 2009).

The insula has been implicated in conscious urges and addiction, showing activation during drug cravings and exposure to cues associated with drugs of abuse (e.g., cocaine, nicotine). In one study, damage to the insula was found to disrupt addiction to cigarette smoking. Research participants were smokers who had smoked at least five cigarettes a day for at least two years before the onset of an acquired brain injury (e.g., stroke). Those who had damage to the insula were more likely to quit smoking easily, immediately, without relapse, and without the urge to smoke (Naqvi, Rudrauf, Damasio, & Bechara, 2007).

See also anxiety, disgust, functional magnetic resonance imaging, positron emission tomography, substance abuse.

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International Affective Picture System

The International Affective Picture System (IAPS) is an in-progress database of color pictures that are intended to elicit emotions in research participants for the purposes of studying emotion and attention. The pictures are standardized, designed to evoke a wide range of emotions (from negative to positive and from low to high arousal) and for use internationally. The pictures vary in complexity, content (some human, some animal, some inanimate), amount of color, and size of image.

The IAPS is used widely in research on general emotion, emotional disorders, emotional experiences associated with different groups (such as younger vs. older participants), and special topics related to emotion such as music and emotion. Researchers from many different countries utilize the IAPS.

The earliest version of the IAPS was published by American psychologists Peter Lang and Mark Greenwald in 1988. The database is continually developed at the National Institute for Mental Health Center for Emotion and Attention at the University of Florida.

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International Classification of Diseases

The *International Statistical Classification of Diseases and Related Health Problems*, commonly referred to as the *International Classification of Diseases* (*ICD*), is currently in its 10th edition (*ICD*-10; World Health Organization, 1990). The *ICD* has its origins in the 1850s. The statistical study of death (mortality) statistics began in London in the early 1600s in an attempt to estimate the percentage of children who died before the age of six years. Later disease (morbidity) classifications were written by French scientist François Bossier de Sauvages (1706–1777), Swedish biologist and physician Linnaeus (1707–1778), and Scottish doctor and chemist William Cullen, who wrote *Synopsis Nosologiae Methodicae* (1785). The first international classification was the *Bertillon Classification of Causes of Death*, which in 1898 was adopted by the registrars of Canada, Mexico, and the United States (World Health Organization [WHO], n.d.). The plan was to review and revise the classification every 10 years. Subsequent conferences to review the classification from 1900 through 1938 included the Health Organization of the League of Nations and delegates from more than 26 countries. The sixth revision included diseases (morbidity) as well as mortality figures. It was titled the *International Classification of Diseases, Injuries, and Causes of Death* (1948).

Having an internationally agreed-on classification system of diseases and disorders allows countries to assess the progress of health care and the control of disease. The *ICD* system has also become a widely used method to bill insurance, promote communication among health care providers, further health care and epidemiology research, and measure the effectiveness of health care interventions and treatments. The *ICD* is organized by parts of the body affected (e.g., respiratory, skin) and contains descriptions, diagnosis, and procedure codes. While some countries (e.g., Australia and Canada) have adopted *ICD*-10, the United States only uses it for reporting death (mortality) statistics. *ICD-9-CM* (9th version, Clinical Modification; WHO, 1988) is still used for morbidity (sickness and disease) in the United States. The *ICD* is available in the six official languages of WHO (Arabic, Chinese, English, French, Russian, and Spanish) as well as in 36 other languages.

In the area of mental health, systems comparable to the *ICD* include the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000) and—for young children—the *Diagnostic Classification System of Mental Health and Developmental Disorders of Infancy and Early Childhood* (DC:0–3R). There is considerable overlap between the *DSM* and the *ICD*, both of which contain criteria for mental health symptoms and disorders. *ICD* categories are very similar to *DSM* Axis I categories. The *DSM* is more widely used in the United States, and the *ICD* system is more widely used in Europe and the United Kingdom (Stirling, 1999).

Both *ICD* and *DSM* are categorical systems in which each mental illness is seen as a discrete diagnostic entity. Critics of categorical systems support an alternative dimensional approach in which symptoms are seen as exaggerations of normal emotions and feelings occurring along a continuum. The dimensional approach sees the distinction between normal and abnormal human experience (e.g., mental illness) as a matter of degree and somewhat arbitrary (Stirling, 1999). Supporters of both systems (dimensional and categorical) agree that it is important that individuals receive the appropriate treatment and that treatment be linked to the correct diagnosis.

See also Diagnostic and Statistical Manual of Mental Disorders, Diagnostic Classification System of Mental Health and Developmental Disorders of Infancy and Early Childhood.

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World Health Organization Web site: http://www.who.int/classifications/icd/en/

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Interpersonal Psychotherapy

The principles and general philosophy of interpersonal psychotherapy are based in the interpersonal theory of American psychiatrist and psychodynamic theorist Harry Stack Sullivan, who emphasized that personality difficulties arise primarily in relationships with others, and in attachment theory, which holds that interpersonal loss and attachment issues are at the core of psychological problems. The actual techniques and form of the therapy were developed by clinical researchers Gerald Klerman and Myrna Weissman in the 1970s and 1980s. They adapted techniques from both psychodynamic (Freudian and neo-Freudian) therapists and the more modern cognitive-behavioral therapists. The treatment was originally designed for adults diagnosed with moderate or severe clinical depression.

The basis of interpersonal psychotherapy is the idea that psychological problems are largely caused by interpersonal issues. According to the theory, one or more of four major areas of interpersonal problems may be associated with depression. The first is *interpersonal loss*. The client's grieving process following the death of a loved one may have become problematical (i.e., excessive or prolonged). The interpersonal therapist would encourage the client to explore the lost relationship and express feelings that may be unresolved. The client would create a new way of thinking about the lost person and, by the end of treatment, would be prepared to seek new connections and relationships with people. A second area is *interpersonal role disputes*, which may occur in romantic relationships, families, or work or other settings. In a romantic relationship, the client may find that she and her partner have different expectations of their relationship or different interaction styles that lead to conflict. For example, one partner may expect the partner to follow traditional sex roles while the other finds this expectation to be too restrictive. Treatment would involve questioning whether the beliefs of the client are realistic and constructive and teaching behavioral techniques such as new methods of communication and problem solving. A third area is *interpersonal role transition.* An individual may have experienced a major life change such as the birth of a child, moving across country, divorce, or marriage. It may be difficult to navigate the new roles that are required by these life changes. They would encourage the

person to seek out support from others (social support) and develop the skills that are required by the new role. A fourth area is *interpersonal deficits*, such as poor social skills or extreme shyness. Treatment would involve helping the client to see that he has a "problem" (e.g., engaging in role-play and showing the client how his behavior might be viewed or received by others). In addition, behavioral or cognitive-behavioral techniques would be used to teach the social skills that are required, for example, assertiveness or anger management.

Interpersonal psychotherapy is brief, typically designed for 12 to 16 one-hour, weekly sessions. According to the theory, three main issues that should be addressed in depression are symptom formation, social functioning, and personality. Interpersonal psychotherapy works on social functioning, which helps to reduce symptom formation. Personality is not directly a focus of treatment since this therapy is of short duration and personality restructuring is time-intensive. Sessions begin by collecting information from the client. The therapist interprets the client's presenting problems in an interpersonal context and explains the interpretations to the client. Treatment proceeds from this framework, using a variety of cognitive, behavioral, psychodynamic (Freudian), and other techniques. The goal of therapy is to create new ways of thinking, feeling, and behaving. The new person is (it is hoped) less vulnerable to future depressions.

Interpersonal psychotherapy is an effective treatment for depression. Several well-designed studies compared interpersonal psychotherapy to other treatments of demonstrated effectiveness (i.e., cognitive-behavioral therapy, antidepressant medication), and results revealed that interpersonal psychotherapy is at least as effective as the other treatments for depression (e.g., Elkin et al., 1989; Weissman et al., 1979). Interpersonal psychotherapy has been adapted to treat other conditions, including bipolar disorder, eating disorders, posttraumatic stress disorder, anxiety disorders, and substance use disorders. Studies of therapy effectiveness for several of these conditions are ongoing.

See also attachment, cognitive therapy and cognitive-behavioral therapy, depression, loss, psychoanalytic perspective, psychodynamic psychotherapy and psychoanalysis, relationships, shyness.

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International Society for Interpersonal Psychotherapy Web site: http://www.interpersonalpsychotherapy.org

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Intimacy

Intimacy is a generalized concept that encompasses feelings and behaviors and that occurs in the context of relationships between [illegible] Being intimate means sharing one's innermost feelings and thoughts with another.

Intimacy involves a variety of positive and negative emotions. Being intimate usually means feeling love, joy, contentment, warmth, and possibly passion. According to American psychologist Robert Sternberg (1988), who proposed the triangular theory of love, love is composed of three main components: intimacy, passion, and commitment. Intimacy is emotional, involving warmth, connectedness, and feelings of closeness. Passion is a motivational component, including strong desire, often (but not always) sexual, and arousal. Commitment is cognitive; it is a decision to love another person and to secure and maintain a bond with that person. Sternberg argued that intimacy is the core, the fundamental component of love. Needless to say, intimacy can occur in relationships that do not involve passion, especially sexual passion, such as friendships and family relationships. Intimacy is clearly connected to the positive emotions joy and happiness. Shaver, Schwartz, Kirson, and O'Connor (1987) found that adults report the highest levels of happiness when they feel loved and accepted by others and when people praise them or show affection toward them.

As social psychologist Elaine Hatfield (1984) described, fear is an emotion that is often strongly linked to intimacy. Hatfield identified six types of fear commonly associated with intimacy: fear of exposure (revealing the true self and making oneself vulnerable), fear of abandonment, fear of angry attacks (that a partner will become angry and attack either physically or psychologically), fear of loss of control (that with closeness, another person will have too much control over one's own thoughts and feelings), fear of one's own destructive impulses, and fear of losing one's individuality. This latter fear, the fear that one's own self will be lost in a relationship, has been discussed by many interpersonal relationship scholars. For instance, Leslie Baxter (1988, 1990) introduced a theory she called *dialectics theory*. According to Baxter, people have strong needs for both intimacy and independence or autonomy. She called this the autonomy-connection dialectic. These intimacy and independence needs often conflict and lead to a push and pull in relationships. People also have needs to disclose to others and to keep some information private; these needs create another conflict. Baxter called this the *openness-closedness dialectic*. To achieve satisfaction in relationships, people must balance these opposing motives.

Scholars who have studied intimacy include psychologists, sociologists, communication researchers, and others. Miller, Perlman, and Brehm (2007) have written a comprehensive textbook, *Intimate Relationships*, describing theory and research on many topics related to intimacy, including nonverbal communication, attraction, sex and gender comparisons in intimacy, friendship, love, conflict, jealousy, and other topics.

See also family, friendship, loneliness, love, relationships, social support.

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Introversion

In the 1920s, eminent Swiss psychiatrist Carl Jung was the first of the modern personality theorists to clearly detail the difference between introversion and extraversion. He spoke of these attributes primarily in terms of sociability and of where one directs his energy (toward the self or toward an external object). Jung (Jung & Hull, 1992) described introversion and extraversion as follows:

> [Introversion] is normally characterized by a hesitant, reflective, retiring nature that keeps itself to itself, shrinks from objects, is always slightly on the defensive and prefers to hide behind mistrustful scrutiny. [Extraversion] is normally characterized by an outgoing, candid, and accommodating nature that adapts easily to a given situation, quickly forms attachments, and, setting aside any possible misgivings, will often venture forth with careless confidence into unknown situations. In the first case obviously the subject, and in the second the object, is all-important. (p. 44)

Jung stated that introversion-extraversion was the primary personality difference among people. According to him, we possess both characteristics but have a strong preference for one. If introversion is preferred, the individual becomes an adept introvert. He is capable of extraversion but utilizes this characteristic with awkwardness.

Jung was not alone in identifying introversion-extraversion as an important individual difference variable. The majority of the comprehensive theories of individual differences (i.e., those of Eysenck, Cattell, Tupes, and Christal) include introversion-extraversion as a primary trait. Additionally, most broad-based, general personality tests measure introversion-extraversion.

Many modern theorists view introversion-extraversion as being related to positive emotion, in addition to being related to sociability. Specifically, extraverts tend to experience high levels of positive emotion, whereas introverts generally feel low levels of positive emotion. This point has to be made clear, however: introverts are not necessarily high in negative emotion such as sadness, fear, or anger. Rather, introverts generally experience low levels of happiness, joy, excitement, and hedonistic feelings compared to extraverts. According to some psychologists (e.g., Watson & Clark, 1997), it is this high positive emotion that leads to the outgoing, assertive, active, and excitement-seeking behavior that is characteristic of extraverts. Introverts, without this outward-directed excitement and energy, are more solitary, withdrawn, and hesitant. The rewards they seek may be of a quieter variety such as the gratification that comes from doing solitary work, reading, hobbies, or individual sports such as swimming.

Results of some studies reveal that introverts [illegible] more sensitive to pain. According to a review by Eysenck (1990), introver[illegible] lower [illegible] thresholds [illegible]

extraverts. Introverts salivate more than do extraverts when drops of lemon juice are placed on their tongues (Deary, Ramsay, Wilson, & Riad, 1988). Additionally, introverts are more difficult to sedate than are extraverts; they require higher dosages of sedative drugs (Wilson, 1978). The interest in introversion and extraversion has remained steady since the beginnings of modern psychology. In the last couple of decades, investigators have begun exploring the meanings of the emotional facets of these characteristics.

See also affective personality traits, extraversion, PEN model of personality, shyness.

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J

William James (1842–1910)

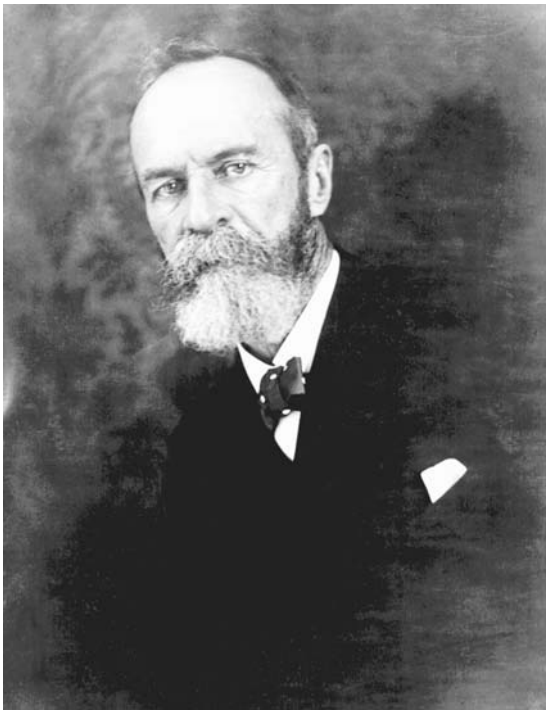
American psychologist and philosopher William James was one of the leading contributors to emotion theory during the 19th and 20th centuries. His James-Lange theory of emotion inspired thinking and research that continues to this day.

James was born in New York City in 1842, son of Henry James Sr. and Mary Walsh James. Since William James's grandfather had become rich buying and selling land, Henry Sr. did not need to work to earn a living. Henry Sr. valued education and all intellectual affairs and spent a great deal of his time with other intellectuals. He also used much of his wealth to provide the best possible education for his children. William, his brother Henry Jr. (who became a famous novelist), and the other three children were educated in Europe, at exclusive private universities in the United States, or both.

As a young man, William had a passion and talent for art and worked as a painter. After a short period, however, he decided to abandon art and to pursue medicine instead. It is not clear why he made this change, perhaps because his father suggested it. James entered Harvard in 1861 and graduated with a medical degree in 1869. He never practiced medicine; instead, he was hired in 1874 to teach a course about the relationship between physiology and psychology at Harvard University. In 1875, he also established a demonstrational lab in psychology there. Both of these were achievements for the psychology field. Most historians say that modern scientific psychology had its origins in the 1870s and 1880s in the United States and Europe. For several reasons—including this early course taught by James and his creation of a lab—some argue that James should be considered the father of modern psychology. In 1876, James was appointed to the rank of assistant professor at Harvard. In 1885 he was promoted to full professor of philosophy, and in 1889 to full professor of psychology.

James's theory of emotion is called the James-Lange theory because Danish psychologist Carl Lange introduced the same ideas at the same time. The James-Lange theory is based on the principle that emotional feeling is a result of physical reactions to a stimulus; the body reaction to a stimulus precedes the feeling aspect (subjective experience) of the emotion. Specifically, James and Lange suggested that the perception of a stimulus produces a specific body reaction and that the body reaction produces the

emotional feeling. This sequence of emotional experience contradicts the common notion that emotion precedes the bodily reaction to a stimulus. In his article, James stated that "we feel sorry because we cry, angry because we strike, afraid because we tremble" (Lange & James, 1922, p. 13). A major point of this theory is that it does not assume any intervening cognition of emotion that comes after the physiological arousal. The arousal itself is considered the emotional feeling. An additional significant aspect of this theory is that different emotions might be associated with different physiological responses, although James and Lange did not specifically address this issue (Russell, 2003).



William James not only pioneered in the study of psychology in the United States but also achieved international fame as a philosopher with his doctrine of pragmatism, a method for determining truth by testing the consequences of ideas. (Library of Congress)

The James-Lange theory has had a tremendous impact on the development of emotion theory, for example, by inspiring research on whether differential physiological responses occur for the various emotions. This research is ongoing. However, the James-Lange theory has been heavily criticized. In particular, the theory was scientifically attacked by Walter Cannon, an American physiologist in the late 1920s. One criticism he made was that many of the necessary physiological responses to which James and Lange allude, particularly the hormonal action of the autonomic nervous system, are too slow to cause the emotional feeling.

Another highly significant contribution of James was his two-volume, 1,393-page book *The Principles of Psychology*, published in 1890. The books were a huge success; they were the standard psychology texts in the United States, England, Germany, France, and Italy for several years (Hothersall, 2004). The books were extremely well written and painstakingly researched. They had an appeal for academics, students, and general audiences. Psychologists today still praise these books highly. For instance, Peter Gray, who has written an introductory psychology text that has been successful for a couple of decades, called James's text the best introductory text ever written (Gray, 2002).

James was an outstanding writer and lecturer and an engaging teacher of psychology who enjoyed interaction with his students. He served two terms as president of the American Psychological Association (in 1894 and in 1904). He is widely recognized as a significant figure in psychology. For instance, in a 1970 poll of 1,000

members of the American Psychological Association, ranking psychologists for the influence they had on the development of psychology, James ranked sixth (Wright, 1970). However, in some ways, James was not fully devoted to the psychology field. For example, he did not devote much energy or time to research other than the research demonstrations that he did specifically for teaching. Additionally, during the last 10 years of his life, he moved away from psychology and devoted his scholarly pursuits to philosophy, publishing two influential books, *Pragmatism* in 1907 and *The Meaning of Truth* in 1909. For these reasons, in discussions of who should be denoted as father of modern psychology, support for James is lukewarm.

In 1878 (when he was 36), James married Alice Howe Gibbons, a Boston schoolteacher. Their marriage was largely a happy one; they shared many interests. They had five children. In the last 12 years of his life, James suffered from heart problems, and he died of a heart attack in 1910 at age 68.

See also autonomic nervous system, Walter Cannon; Cannon-Bard theory of emotion, James-Lange theory of emotion, stress, stress hormones, sympathetic nervous system.

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James-Lange Theory of Emotion

The James-Lange theory of emotion was independently developed in the late 19th century by American psychologist William James and Danish psychologist Carl Lange. James first discussed his view on the genesis of emotion in an article titled "What Is an Emotion?" published in the journal *Mind* in 1884. Later in his book *The Principles of Psychology*, published in 1890, he explicitly stated his theory of emotion. Around the same time, Lange published similar views and reaffirmed James's theory.

The James-Lange theory of emotion is based on the principle that emotion is a result of physical reactions to a stimulus; the body reaction to a stimulus precedes the feeling aspect (subjective experience) of the emotion. Specifically, James and Lange suggested that the perception of a stimulus produces a specific body reaction and that the body reaction produces the emotional feeling. This sequence of emotional experience contradicts the common notion that emotion precedes bodily

reaction to a stimulus. In his article, James stated that "we feel sorry because we cry, angry because we strike, afraid because we tremble" (Lange & James, 1922, p. 13). A major point of this theory is that it does not assume any intervening cognition of emotion that comes after the physiological arousal. The arousal itself is considered the emotional feeling. An additional significant aspect of this theory is that different emotions might be associated with different physiological responses, although James and Lange did not specifically address this issue (Russell, 2003).

James and Lange held the idea that physiological activity is necessary for the production of emotional experience. In their view, the emotion-provoking object itself is not strong enough to produce emotional experience. As some researchers have pointed out, some of James's statements were lacking in clarity, leading to some confusion about the theory. For instance, James said that when you see a bear, you first run away then feel fear, rather than feeling fear then running away (as common sense would suggest). But others have said that running away from a bear is not automatic: we would not run away from a bear in a zoo or a bear that we saw sleeping in the woods. As they say, some interpretation, or appraisal, of the situation is necessary for you to run. For example, Kalat and Shiota (2007) restate and clarify the James-Lange theory as shown in Table 6.

Table 6: James-Lange Theory of Emotion

Event	→	Appraisal of event	→	Action (both behavioral and physiological responses)	→	Emotional feeling
(threatening bear)	→	(this is threatening)	→	(running and stress reaction)	→	(fear)

The James-Lange theory has had a tremendous impact on the development of emotion theory, for example, by inspiring research on whether differential physiological responses occur for the various emotions. However, the James-Lange theory has been heavily criticized. In particular, the theory was scientifically attacked by Walter Cannon, an American physiologist in the late 1920s (e.g., see Cannon, 1915/1929). One criticism he made was that many of the necessary physiological responses that James and Lange refer or allude to, in particular, the hormonal action of the autonomic nervous system, are too slow to cause the emotional feeling. Another critique was that one would expect individuals with spinal cord injuries to experience relatively numbed emotions (since nervous system damage would mean a reduced physiological reaction to a stimulus), but research has produced mixed findings, with some results suggesting less intense emotional experience among spinal cord injury patients (e.g., Mack, Birbaumer, Kaps, Badke, & Kaiser, 2005) and other results indicating normal emotional experience (e.g., Cobos, Sanchez, Perez, & Vila, 2004).

See also autonomic nervous system, Walter Cannon, Cannon-Bard theory of emotion, feeling, William James, physiology of emotion, subjective experience of emotion, sympathetic nervous system

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Jealousy

Jealousy is the feelings, thoughts, and behaviors that occur when an individual perceives that a rival threatens his romantic relationship. The emotions involved in jealousy are anger, fear, and hurt (Guerrero & Andersen, 1998). Anger is present because the jealous individual thinks that he has been betrayed or could be betrayed. Fear arises from the perception that one could lose his partner, and sadness occurs due to the possible loss of trust in the relationship.

Scholars have viewed jealousy from diverse perspectives, including attachment theory and evolutionary theory. Scholars from both theoretical viewpoints have attempted to explain how jealousy is functional. According to attachment theory, adult romantic relationships involve *attachment* that is highly similar to the attachment of an infant and her caretaker (Sharpsteen, 1999). Young infants become attached to a single person, often the mother. The attachment is expressed in behavior, meaning that the infant desires and makes efforts to maintain close proximity to the attachment figure. Additionally, attachment is an emotional bond. During particular developmental periods, the infant will scream and cry when separated from the mother; the crying is not only an emotional expression but also an attempt to encourage the mother to return. Scholars studying jealousy make note that infant behavior surrounding the experiences of separating from and reuniting with mother meets the description of jealousy. Specifically, they show fear when the mother leaves, may show anger when she returns (perhaps hitting Mom or having a mini temper tantrum), and demonstrate sadness/hurt if the separation is prolonged.

According to the attachment perspective on jealousy, adults become attached to other adults, and jealousy feelings and behaviors may be the adult counterpart of the feelings and behaviors that an infant has when threatened by separation from her mother. The adult expressions of fear, anger, and sadness may be designed to maintain the physical and psychological attachment between two individuals, just as these behaviors function the same way in the infant-mother attachment bond.

Evolutionary psychologists have a somewhat different perspective on the function of jealousy. According to Buss (2000), jealousy evolved to motivate people to act in ways that are likely to protect their close relationships. Close relationships are

advantageous from an evolutionary perspective because they enhance the survival of people's offspring, thus ensuring survival of their genetic material. Buss argues that early humans who reacted strongly to potential romantic rivals by vigilantly scanning for potential threats, discouraging rivals, and keeping their mates happy and satisfied were more likely to keep their relationships and reproduce more than people who were apathetic when a potential rival came along. Therefore jealousy is currently a part of our genetic makeup because it led to a reproductive advantage in the past. Jealousy scholars have reviewed research on a wide variety of topics related to jealousy such as individual characteristics that make one prone to jealousy, sex differences in jealousy, various events and circumstances that tend to evoke jealousy, and how to cope with jealousy (e.g., Miller, Perlman, & Brehm, 2007; Pines, 1998).

See also anger, attachment, evolutionary psychology (human sociobiology), fear.

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Joy

Joy is one of the variety of positive emotions or affective states that also include happiness, contentment, pleasure, excitement, satisfaction, gladness, ecstasy, and others. According to Bagozzi (1999), the English language has about 40 words that describe states that are variants of happiness.

The word *joy* is sometimes used generically to describe a pleasant emotional or affective state. However, psychologists have attempted to distinguish the variety of positive states in an effort to provide clear descriptions of each individual state. The states can be categorized as other-directed (interpersonal) or self-directed (intrapersonal; DeRivera & Grinkis, 1986). Love is an example of an other-directed state, whereas most of the positive emotion terms, including joy, refer to self-directed states. Emotions and affective states may also be distinguished by degree of arousal (e.g., Russell, 1980). Some positive states involve high arousal, such as ecstasy, and others involve low arousal, such as tranquility or contentment. Joy falls in between these extremes, with moderate arousal. Another way to understand affective experience is to consider whether a particular type of experience is a reaction to an immediate event or whether it describes an individual's typical or customary way of feeling (the latter may indicate a personality trait). Applying this distinction, joy

is usually used to mean a positive emotional experience that occurs as a reaction to a particular event, whereas according to some emotion researchers (e.g., Kalat & Shiota, 2007), the term *happiness* is more appropriate for an affective state that one has more consistently; thus some people can be said to have happy personalities.

Schumm (1999) distinguishes between four positive emotional states: pleasure, satisfaction, happiness, and joy. The main difference between the four states has to do with what causes the state. Pleasure is usually associated with the occurrence of something tangible such as eating good food, using a drug, or finding a $100 bill on the street. The cause of pleasure is not necessarily related to anything that the individual experiencing the pleasure has achieved or earned (although it can be). The feeling of pleasure is short-lived; it tends to go away soon after the event that caused it. Satisfaction is more complex than pleasure because it involves thinking. Someone experiences satisfaction when he achieves what he has set out to achieve or what he feels he deserves. For instance, a person may feel satisfaction when he has won an award that he thought he deserved for the poem that he wrote. Since satisfaction involves thinking (cognition), it may be either fairly easy or fairly difficult for a particular individual to experience it; some people may hold very high standards for feeling satisfaction, for instance, by requiring high absolute performance or requiring oneself to continually achieve more and more over time or requiring oneself to be better than all competitors. Happiness is less cognitive and more emotional than satisfaction; Schumm (1999) and others have described happiness as the emotional aspect of a general sense of well-being, whereas satisfaction is the cognitive aspect. Additionally, happiness is often described as being largely derived from the quality of one's interpersonal relationships with friends and family. Joy is usually associated with transcendent experiences. Most often, these experiences are religious or spiritual or the result of involvement in meaningful work. Csikszentmihalyi (1997) has described the feeling of "flow," intense concentration and full involvement, that occurs when an individual is engaged in much-loved work and is making nearly full use of his capabilities. A significant component of flow is joy.

See also flow, happiness, pleasure, positive emotions, satisfaction.

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L

Lability (Emotional)

Lability, which is instability or changeability, applies to a number of emotion concepts. Lability is an aspect of the emotion concept itself. From a psychological point of view, an emotion is an immediate, temporary reaction to an event or experience. Thus an emotion tends to last a few minutes or hours, then subsides, and other emotions surface.

Emotional lability is a central feature in a number of psychological disorders. Bipolar disorder (formerly called manic depression) involves a cycling between periods of depression, periods of mania (which involve grandiosity and high energy, and often elevated mood), and periods of "normalcy." Borderline personality disorder is also characterized by emotional lability; in this condition, an individual has major mood shifts, unstable self-perceptions and perceptions of others (e.g., idealizing someone one day and vilifying him the next), and unstable relationships.

Emotional lability may be associated with traumatic brain injury, Alzheimer's disease, stroke, autistic spectrum disorders, and attention-deficit hyperactivity disorder. Emotional lability characterizes some common psychological states or experiences outside of the realm of psychological disorders. Emotional lability may be associated with hormonal changes (e.g., during puberty, pregnancy, and after childbirth). Experiencing menopause often means experiencing increased mood swings (Xu et al., 2005). Additionally, a component of the general personality trait "neuroticism" is moodiness and emotional instability.

See also bipolar disorder, borderline personality disorder, menopause, mood, mood swings, neuroticism, personality disorder.

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Arnold A. Lazarus (1932–)

Arnold Lazarus is a pioneer in the field of psychotherapy. He is probably best known for developing multimodal therapy (MMT), a multifaceted approach to psychotherapy based on cognitive-behavioral therapy (CBT).

Dr. Lazarus was born in Johannesburg, South Africa, in 1932. He attended the University of Witwatersrand in Johannesburg, where he earned his bachelor's and master's degrees, receiving a PhD in clinical psychology in 1960. In 1958 (while still a graduate student), Lazarus originated the term *behavior therapy* in a paper published in the *South African Medical Journal.* He started a private psychotherapy practice in Johannesburg in 1959. In 1966, while director of the Behavior Therapy Institute in Sausalito, California, he published *Behavior Therapy Techniques* with Joseph Wolpe.

Dr. Lazarus has been an innovator, utilizing novel approaches to psychotherapy: Lazarus and Abramowitz were the first psychologists to use emotive imagery (a desensitization method utilizing imagery and relaxation to overcome fears and phobias) with children, and Lazarus was the first to use desensitization techniques to treat phobias in group settings (Alic, 2001). Lazarus has long been a proponent of a multifaceted (broad spectrum) approach to psychotherapy. In 1958, Lazarus stated that "the emphasis in psychological rehabilitation must be on a *synthesis* which would embrace a diverse range of effective therapeutic techniques, as well as innumerable adjunctive measures, to form part of a wide and all-embracing re-educative programme" (Lazarus, 1958, p. 710). In *Behavior Therapy and Beyond* (Lazarus, 1971), the book that laid the foundations for CBT, Lazarus again advocated a broad-spectrum approach to psychotherapy.

In his research on the long-term results of CBT, Lazarus found high relapse rates for patients who underwent CBT for panic and anxiety disorders, obsessive-compulsive problems, depression, and marriage and family problems. So Lazarus developed a distinctive therapeutic orientation, MMT, between 1970 and 1973. MMT is a comprehensive appraisal that looks at seven arenas of human functioning, including behavior (B), affect (A), sensation (S), imagery (I), cognition (C), interpersonal relationships (I.), and drugs/biology (D.). From these seven areas comes the MMT acronym BASIC I.D. MMT has been utilized in diverse environments, including schools, psychiatric hospitals, and residential facilities.

MMT has been refined since its development, and training in MMT has been part of the clinical doctoral program at Rutgers since 1972. In 1976, Lazarus established the Multimodal Therapy Institute in Kingston, New Jersey; he is currently executive director of the Lazarus Institute in Skillman, New Jersey. Nine books, many chapters, and numerous articles have been published on MMT.

Dr. Lazarus has authored 18 books and hundreds of scientific publications. He has received the American Psychological Association's Distinguished Psychologist and Distinguished Professional Contributions awards, the American Board of Professional Psychology's Distinguished Service Award, and the first Annual Cummings PSYCHE Award, among others. Dr. Lazarus has been a faculty member of Stanford University, Temple University Medical School, and Yale University and has maintained an active psychotherapy practice since 1959.

See also behavior therapy, cognitive therapy and cognitive-behavioral therapy, multimodal therapy: BASIC I.D., systematic desensitization.

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Learned Helplessness

In the 1960s, Martin Seligman, a young graduate student at the University of Pennsylvania, became interested in people who possess an attitude and behavior tendency that often causes suffering for themselves and those around them. His interest was in passivity, the tendency that some people have to resign themselves to their fates, to do nothing to solve their problems, even when they likely have the physical and cognitive capacities to improve their circumstances. Seligman set out to learn why some individuals possess this level of apathy.

His interest did not develop out of thin air; research that his graduate lab was conducting at the University of Pennsylvania inspired Seligman's musings. In the laboratory research supervised by Seligman's graduate school advisor, dogs were being trained to associate a tone with a shock. The purpose of these studies was to see if the dogs could learn to anticipate the shock once they heard the tone and then take action to escape the shock. In the experiment, which left the researchers baffled, the dogs that had been previously conditioned to associate the tone and shock reacted in an opposite way than predicted; when shocked, instead of moving around so that they could jump over a barrier and escape the shock, the dogs lay down and whimpered, accepting the painful shock. In a moment of insight, Seligman realized that the conditioning had actually occurred differently than expected. During the experiment, the dogs, in addition to learning that the tone and the shock occur together, may have also learned (Seligman speculated) that they have no ability to prevent the unpleasant event (the shock) from occurring. This learning would have occurred because as the tone and shock were presented together during conditioning, the dogs were restrained and thus unable to escape the shock. As a result, when the same dogs were put in a new situation in which they actually could escape, they did not try to escape.

In the 1960s and 1970s, in a series of classic studies, Seligman, fellow student Steven Maier, another colleague, Bruce Overmier, and others set out to test Seligman's new hypotheses directly. In a key study, dogs, one at a time, were placed in a cage and restrained. They received a series of shocks on their feet through the floor. Then each dog, and other dogs that had not had the initial experience, were placed in a new large cage where a light would turn on periodically. Each time the light was presented, it was followed ten seconds later by a shock to the feet. All animals learned to associate the light with the shock. The dogs that had not experienced the earlier experimental situation (being shocked while restrained) would [illegible] around early in [illegible]. They

would soon learn that if they jumped over a fence to another part of the cage, they would escape the shock. Conversely, the dogs that had experienced the initial experimental treatment of restraint while being shocked would not even try to escape; they would passively accept the shock that followed. Seligman and his colleagues concluded that the dogs who did not try to escape had formed an expectation that their behavior did not matter, their behavior had no effect—these dogs had learned to be helpless (e.g., Overmier & Seligman, 1967; Seligman & Maier, 1967).

Seligman and colleagues generalized this finding with dogs to humans. They suggested that depression, rather than being an inability to cope or being caused by other factors, may be due to an attitude that the individual learned from his life experiences—learned helplessness. Other psychologists and psychiatrists quickly refuted this claim, some stating that many people experience frustrating situations in which their immediate behavior has no effect, but not everyone becomes depressed, and others criticized Seligman and his colleagues' research methodology (e.g., Costello, 1978).

Seligman sought to find a response to the criticisms, still believing that his learned helplessness explanation had merit. He worked together with a psychologist who had criticized him, John Teasdale, and another psychologist, Lyn Abramson. They reasoned that individual difference variables work in conjunction with experiences of uncontrollable events to induce depression. As Abramson, Seligman, and Teasdale (1978) described, we all sometimes experience failures or distressing experiences about which we can do nothing, but we have different ways of making sense of these experiences and of predicting future events based on the experiences. In their new model of depression, they suggested that one of the important factors affecting the probability of developing depression in the face of uncontrollable events is whether the individual believes that the uncontrollable events that are likely to occur say something about her self-worth. For example, if a person fails an exam and perceives that that exam and future exams with that teacher are uncontrollable, she will be more likely to become depressed if the past failure and perceived future failures are believed to be caused by her lack of intellectual ability rather than by the extreme difficulty of the tests.

Seligman and colleagues continued to develop the learned helplessness theory. Peterson, Maier, and Seligman's book *Learned Helplessness: A Theory for the Age of Personal Control* (1993), describes the decades of research on learned helplessness that fleshes out the complexity of learned helplessness theory and situations in which learned helplessness applies. For instance, in addition to explaining depression, learned helplessness has been used to explain poor achievement and poor health.

Beginning in about the 1990s, Seligman and his colleagues began to frame their learned helplessness research and theory in more positive terms, speaking of the converse of learned helplessness, which is optimism. This reframing is consistent with a relatively modern movement in psychology that focuses on what is best in human nature: *positive psychology*.

See also depression, locus of control, motivation, optimism, positive psychology.

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Libido

Sigmund Freud coined the term *libido* in the early 1900s. Libido means sensual desire or the drive for physical pleasure seeking. According to Freud, it is one of three primary motivational forces in people, along with the drive for self-preservation and a destructive drive.

Freud (1905/1953, 1916/1961, 1963/1997) famously and elaborately described the way that libido is linked to human psychological development. According to his theory of psychosexual development, children derive sensual pleasure from particular objects and activities during each of the stages of their psychological development. The stages are named *oral*, *anal*, *phallic*, *latency*, and *genital*; each of these labels identifies the main area of the body around which pleasure is centered during that particular stage. (*Latency* refers to the idea that libido is repressed during this stage, and therefore pleasure is not centered around any part of the body at all.) For instance, in the first stage of development, the oral stage, the infant/young child's pleasure is centered around oral activities: sucking, placing objects in the mouth, and so on. A primary source of enjoyment is the mother's breast. The child not only obtains pleasure from the object (in this case, the breast) but also develops a psychological attachment to the object from which it receives pleasure. These same principles of pleasure and attachment apply to the remaining stages (except latency). The final stage, genital, is psychological maturity. According to Freud, if development has progressed adequately, the individual's libido will be directed toward an opposite-sexed partner during this final stage. Like the other stages, pleasure and attraction are linked with attachment to the object (opposite-sexed partner); pleasure and love are linked. Put another way, according to Freud, sex and love are intimately associated with one another (see Freud, 1963/1997, for further discussion of the connection between sex and love).

Freud (1963/1997) emphasized the role that sensual desire plays in mental illness, particularly *neurosis*, a large class of mental illnesses that are generally less severe than psychosis but that can involve significant suffering, for instance, depression and the wide variety of anxiety disorders. In Freud's theory, development has a goal, which is that the individual reach the genital stage, where the individual becomes capable of experiencing love toward, intimacy with, and desire for sexual activity with a heterosexual partner. Freud went so far as to say that the most normal development in the

genital stage is behavioral heterosexual monogamy (which does not mean that people do not have sexual desire outside of the monogamous bond but means that people, if they are psychologically strong, will tend to choose to behave within the bond). According to Freud, this is the normal and ideal development because it ensures survival of the species. People will mate with someone with whom they can reproduce, an opposite-sexed partner. Furthermore, pair bonding is beneficial for one's offspring and helps to keep societies stable. Although the genital stage is the goal, most people do not arrive at the goal unscathed. Since libido involves both pleasure seeking and love/attachment, the potential exists for both frustration of pleasure and psychological hurt, for example, through feeling rejected by a loved object. In the oral stage, for instance, the child may experience some extreme in breast feeding—overindulgence or deprivation—or the child may have had experiences with the mother that led to mistrust. Under these circumstances, the child will, to some extent, become "stuck" at that stage, leaving less energy (libido) for the child to direct toward the upcoming stages. Freud said that libido is a fixed or limited amount of energy. If libido is directed in one direction (e.g., toward oral interests), there is less libido remaining for another direction (e.g., toward a heterosexual partner).

Being stuck at a stage is called a *fixation*. Fixations are sources of mental illness symptoms. For example, during the oral stage, an individual is passive and dependent. If the caretaker overindulges the child in regard to breast-feeding and other situations, the child may become fixated here, resulting in a number of possible outcomes such as passivity and dependency in adulthood, an eating disorder, oral behaviors such as smoking, and so forth.

Like so many of Freud's theories, aspects of the libido theory have received support and other aspects have not. For instance, many psychologists agree that pleasure seeking is a powerful motive for people (e.g., Skinner, 1938). However, whether pleasure seeking exists in exactly the way Freud most often presented it (almost exclusively sensual) is questionable. Additionally, the idea of whether pleasure-seeking energy is fixed is debatable. Scholars who were initially followers of Freud and who later broke off and developed independent theories, such as Carl Jung and Alfred Adler, revised the libido concept, viewing it as a general creative life force.

See also desire, developmental crisis, Sigmund Freud, Karen Horney, human development, human life span, love, lust, motivation, pleasure, psychoanalytic perspective, the unconscious mind.

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Light Therapy

Sunlight has been used for healing purposes since ancient Greece, when Hippocrates prescribed exposure to sunlight to treat various illnesses. In the late 19th and early 20th centuries, bright light was prescribed to treat several mood and stress disorders, and hospitals were built with solariums (sun rooms) so patients could recuperate in the sunshine (Gale Group, 2006). Light therapy is most often used to treat seasonal affective depressive disorder (SAD) and subsyndromal SAD (winter doldrums). It has also been used to treat other major depressive disorders, including nonseasonal (chronic) depression, premenstrual dysphoric disorder, postpartum depression, depression associated with bulimia, and seasonal manifestations of adult attention-deficit disorder. Light therapy has also been explored to assist with jet-lag adjustments, to help shift workers adapt to rotations, to prevent postoperative delirium (Taguchi, Yano, & Kido, 2007), and to treat premenstrual syndrome. Light therapy is used either by itself or in conjunction with other treatments such as pharmacotherapy (e.g., antidepressant medications), cognitive-behavioral therapy, psychodynamic (talk) therapy, wake therapy (sleep deprivation), or physical exercise.

Children from Bermondsey London playing in artificial sunlight in a solarium with a sunlamp providing the "sunshine," March 2, 1942. Light therapy is most often used to treat seasonal affective depressive disorder (SAD) and subsyndromal SAD as well as other major depressive disorders. (Fox Photos/Getty Images)

Light therapy involves exposure to light of a specified intensity and type for a prescribed duration (dosage), often at a specific time of day. Most research has involved bright-light therapy, although research has been conducted with dim lights. Early light therapy utilized full-spectrum fluorescent lamps, which closely approximate the color composition of outdoor daylight, but ordinary fluorescent bulbs have been found to yield similar results. Morning treatment has generally demonstrated more benefits than evening treatment for people with seasonal depression (Terman & Terman, 2005). Some studies claim that people experience antidepressant benefits from light therapy in only a few days (Terman & Terman, 2005), while

other studies claim it takes several weeks before light therapy shows statistically significant benefits over placebo treatments (Eastman, Young, Fogg, Liu, & Meaden, 1998). While many claims have been made about the effectiveness of light therapy, randomized, controlled studies have demonstrated the effectiveness of bright-light treatment and dawn simulation for SAD and bright-light therapy for nonseasonal depression (Golden et al., 2005). More research is needed to further explore the effectiveness of light therapy (Even, Schröder, Friedman, & Rouillon, 2008).

Side effects of light therapy may include eye strain or visual disturbances, nausea, headache, sweating, sedation, sleep disturbances, and unusual uterine bleeding. Light therapy, especially when used with a selective serotonin reuptake inhibitor (SSRI), may cause mania or hypomania as well as serotonin syndrome (which can cause diarrhea, nausea, hyperthermia, agitation, and disorientation). Light therapy can adversely interact with medications that cause photosensitivity, including some psychiatric medications (e.g., imipramine, phenothiazine, and lithium), supplements (e.g., St. John's wort, melatonin), and other medications (e.g., chloroquine, tetracycline). Anyone considering trying light therapy should have an eye exam; light therapy is not recommended for people with cataracts, glaucoma, or retinopathies. If sleep disturbances (including insomnia) or hyperactivity emerge after the initiation of treatment, the timing, dosage, and intensity of light therapy treatment may need to be adjusted.

See also complementary and alternative medicine, major depressive disorder, seasonal affective disorder.

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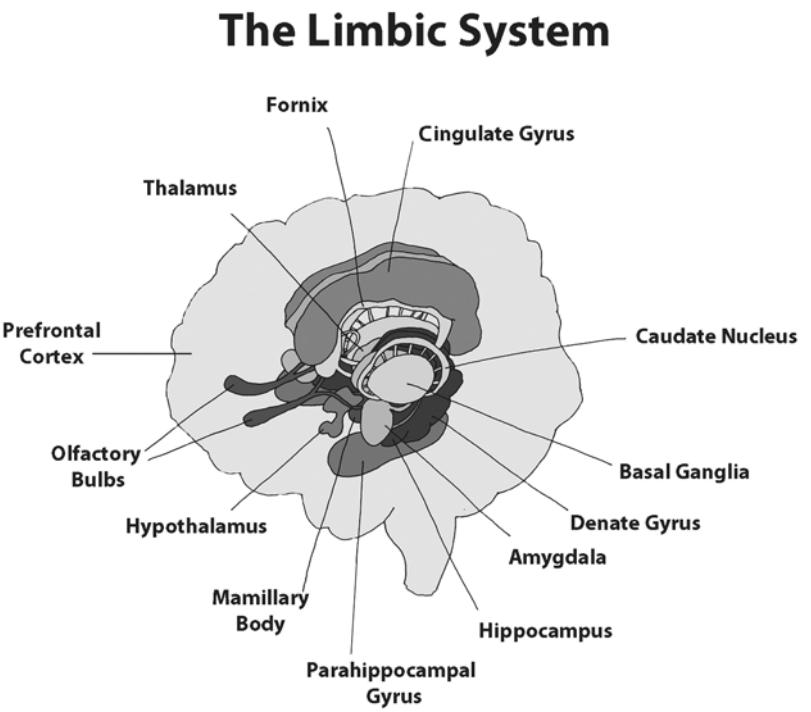
Limbic System

The limbic system is a group of brain areas including the hypothalamus, anterior thalamus, cingulate gyrus, hippocampus, amygdala, septal nuclei, orbitofrontal

cortex, and portions of the basal ganglia. In the late 1940s and early 1950s, American physician and neuroscientist Paul MacLean (1949, 1952) proposed that these structures constitute the *emotional brain*.

The relationship between emotion and several of the limbic system structures (specifically, the hypothalamus, anterior thalamus, cingulate gyrus, and hippocampus) was first proposed by American neuroanatomist Dr. James Papez in his theoretical paper in 1937. These four brain structures were called the *Papez circuit* because they form a circuitous chain. In developing his theory, Papez built on information from at least three sources. First, research by Cannon (1915/1929) and Bard (1929), in which they systematically damaged or removed parts of the brain in animals, demonstrated that the hypothalamus is necessary for an animal to produce an integrated emotional expression (e.g., a cat's behavior when threatened of crouching down, hissing, with ears back, claws ready). Without the hypothalamus, the animal may produce some but not all behaviors characteristic of a particular emotional expression. Second, anatomist C. Judson Herrick (1933) had proposed a theory that distinguished between two parts of the cortex: the lateral (newer, from an evolutionary point of view) and medial (older). According to Herrick, the lateral cortex was responsible for sensation, motor function, and higher-order thinking in humans, while the medial cortex was involved with more primitive functions. Third, Papez had learned about research on damage to the medial cortex resulting in emotional dysfunction.



The limbic system of the human brain. The limbic system is the set of brain structures that forms the inner border of the cortex and is believed to support a variety of functions including emotion, behavior, long-term memory, and olfaction. (ABC-CLIO)

Papez theorized that the neural circuit for behavioral expression of emotion was primarily governed by the hypothalamus, while the actual experience (subjective feeling) of emotion was produced through the interactions among different structures in the Papez circuit. These other structures were part of the medial cortex, which presumably was a part of the cortex common across mammal species and which was relatively "primitive," as Herrick had said. These structures would not have language processing as a focus and were candidates for emotional experience, which can occur viscerally, without verbal labels or higher-order thinking.

Over 10 years later, MacLean integrated Papez's theory and other work, proposing the limbic system, the "emotional brain." As previously described, the limbic system includes the brain structures of the Papez circuit plus additional structures. MacLean discussed the importance of the hypothalamus in behavioral expression of emotion and the cerebral cortex in the experience of emotion. Starting with the hypothalamus as the center, and as a part of the brain with demonstrated involvement in emotion, he reasoned that other parts of the brain that are involved with emotion must be connected (by nerve fibers) to the hypothalamus. Most of the newer (more recently evolved) cortex did not have strong connections to the hypothalamus, but many parts of the medial cortex did. Based on both the observation of neural connections to the hypothalamus and clinical evidence, MacLean thus added brain structures to Papez's circuit. Other than the hypothalamus, MacLean suggested the hippocampus was the primary brain structure involved in emotional experience, because of both its location and its anatomy (LeDoux, 1996). The nerve cells (neurons) of the hippocampus are large and located next to one another in an orderly fashion. MacLean referred to the hippocampal neurons as an "emotional keyboard," the firing of particular neurons being associated with particular emotions. As hippocampal neurons lack the analyzing capacity of other neurons associated with more advanced anatomy, experience associated with stimulation of hippocampal neurons is relatively crude.

MacLean's theory was extremely influential and has played a large role in the development of knowledge about human emotion. However, the limbic system theory—at least as MacLean presented it—is largely unsupported. LeDoux (1996) describes a number of shortcomings with this theory. First, research indicates that the hippocampus plays a more significant role in memory than it does in emotion. Second, if one uses the criterion of nerve connections with the hypothalamus to identify whether a structure is involved with emotion, then most of the brain would qualify as the emotional brain. Third, at present, only particular brain structures have been clearly indicated in emotion, in particular, the amygdala, which is involved in fear. Thus LeDoux says that there really is no limbic system; there are clearly brain structures that are involved in emotion, and we have not yet identified all of them and their roles, but the limbic system concept is outdated.

While the limbic system concept as MacLean originally conceptualized it lacks support, it has led to some illuminating research regarding the brain and emotion. Results from neuroimaging studies (e.g., functional magnetic resonance imaging) continue to shed light on various theories of emotion processing. In addition to the limbic system concept, other theories have focused on the role of the brain's right hemisphere in emotion processing and the association between specific brain regions and emotions. For example, the amygdala is strongly associated with fear, the insula with

disgust, and anger with the lateral orbitofrontal cortex (Murphy, Nimmo-Smith, & Lawrence, 2003).

See also amygdala, functional magnetic resonance imaging, hippocampus, hypothalamus, physiology of emotion, triune brain.

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Lithium Therapy

Compounds of the chemical element lithium (i.e., lithium carbonate, lithium citrate) are common pharmaceutical treatments for the psychiatric condition bipolar disorder (formerly known as manic depression). People suffering from bipolar disorder alternate between episodes of depression, episodes of mania (typically characterized by elevated mood, high self-esteem, and high energy), and periods of normal mood and energy levels. Lithium treatments stabilize mood and help prevent future episodes of mania or depression in many people with bipolar disorder.

Lithium compounds were used in the 19th century to treat anxiety, seizures, and gout (Preston, O'Neal, & Talaga, 2008). In the 1940s, lithium was discovered as an effective treatment for bipolar disorder by Australian psychiatrist John Cade. Cade thought that mania was caused by an overabundance of a toxin circulating in the bloodstream and that the depression in bipolar disorder was caused by having too little of an unknown substance. Cade engaged in a tireless search for this hypothetical substance. In what he admitted was a fairly crude investigative approach, he injected the urine from manic patients into guinea pigs. He found that urine from manic patients was much more toxic than urine from other sources, killing the guinea pig more quickly. Cade next separated urine into its chemical components to identify the specific toxin. The discovery of lithium as a treatment was then fortuitous. Cade found that studying one of the compounds, uric acid, was difficult

because crystals of uric acid are insoluble in water. To be able to dissolve uric acid, Cade added lithium to it, forming lithium urate. When he injected lithium urate, along with urea (another component of urine, which he had already found was highly toxic) into guinea pigs, he expected that the lithium urate would make urea even more toxic. Instead, urea was less toxic. Cade had identified lithium as a substance that reduced toxicity of another substance (Cade, 1949).

To investigate the helpful role of lithium, Cade injected it into guinea pigs without also injecting urea. He used lithium carbonate rather than lithium urate to reduce the possibility of side effects. When he injected lithium carbonate into the guinea pigs, they became sedate, a marked contrast to their typical frenetic behavior. Cade hypothesized that lithium could also have a calming effect on manic patients. His next step was to try the substance on himself to make sure it was safe. He suffered no ill effects and then tried lithium on 10 manic patients. His experiment was a success: the patients improved on the medication. In 1949, Cade published his findings in an article in the *Medical Journal of Australia* titled "Lithium Salts in the Treatment of Psychotic Excitement."

Lithium was a true success story in terms of treatment of psychiatric disorders; most medications in the 1940s and early 1950s were not very effective, and lithium not only alleviated current symptoms but could also prevent future episodes of mania or depression. It was used in many countries following the publication of Cade's paper but was not widely utilized in the United States until its approval by the U.S. Food and Drug Administration in 1970. Lithium is still used as a medication for bipolar disorder; 60 percent of patients who suffer manic episodes experience improvements (Carney & Goodwin, 2005). Depressive episodes also respond to lithium, although less markedly. Lithium is not effective for all individuals with bipolar disorder, and side effects are potentially very serious. Lithium should not be taken during pregnancy as it can cause birth defects (Preston et al., 2008). Some newer medications have comparable effectiveness as lithium with fewer side effects. Other mood stabilizers used in the treatment of bipolar disorder include valproic acid, carbamazepine, and lamotrigine. Medications used in addition to mood stabilizers to treat bipolar disorder include antidepressants, benzodiazepines (e.g., Valium), and antipsychotics (e.g., olanzapine; Preston et al., 2008). In 1998, valproic acid (divalproex, Depakote) replaced lithium as the most frequently prescribed drug for bipolar disorder (University of Texas Medical Branch, 1999).

It is not entirely clear how lithium achieves its therapeutic effect. One theory is that lithium may bring about changes within neurons, operating on substances called *second messengers* that prepare neurons for firing (Julien, 2007). Other evidence suggests that lithium increases the activity of particular proteins and other chemicals within neurons, thereby improving the health of these neurons (Gray, Zhou, Du, Moore, & Manji, 2003). Lithium's mechanism of action may operate through multiple routes. Ongoing research may determine how lithium and other mood-stabilizing medications help to stabilize the moods of bipolar patients.

See also antimanic, bipolar disorder, mood stabilizer.

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Australian psychiatrist John Frederick Joseph Cade (1912–1980) discovered lithium carbonate, used as a mood stabilizer in the treatment of bipolar disorder. Cade's father, physician David Cade, suffered from depression and "war weariness" after serving in Gallipoli in World War I. Unable to maintain his medical practice, David Cade accepted a position with the Mental Hygiene Department, working at several Victorian mental hospitals. Thus John F. Cade and his brothers grew up living on the grounds of several mental institutions. This had a great bearing on John's future interest in treatments for the mentally ill. Cade was also influenced by his own experiences in Changi prison camp in Singapore during World War II (Cade, 1999).

As lithium salt is a naturally occurring chemical, it cannot be patented. Because of its limited commercial viability and toxicity, it was not widely accepted in psychiatry until its approval by the U.S. Food and Drug Administration in 1970 (Mitchell & Hadzi-Pavlovic, 2000).

Locus of Control

Locus of control is a personality trait identified by psychologist Julian Rotter (1966) that has been associated with health and other outcomes. People with an internal locus of control believe that they have control over their own lives. People with an external locus of control believe that something other than themselves (i.e., other people, the environment, fate, luck, the government) determines what happens to them. Locus of control exists on a continuum, and thus an individual may be strongly internal or strongly external, or anywhere in between.

Overall, an internal locus of control has been associated with positive outcomes. For instance, compared to external control, those with internal control have less severe physical illness, are less likely to abuse substances such as drugs or alcohol, are more successful in quitting negative habits such as smoking, are higher achievers, have better overall psychological adjustment, cope better with stress, and many other examples. In her book *Control and the Psychology of Health*, Walker (2001) does a good job of explaining the role of control, including locus of control, in physical and psychological health. She discusses some of the research findings mentioned earlier. Additionally, and not surprisingly, internal locus of control is associated with positive emotions, and external locus of control tends to be correlated with negative emotions (e.g., Masters & Wallston, 2005).

Locus of control develops in the context of our life experiences. One factor that affects locus of control is the manner in which parents have reinforced or punished us as children. Parents who attend to and approve their children's positive behaviors tend to produce children with internal locus of control. When parents devalue children without any relation to the children's behavior, external locus of control is likely to develop (Krampen, 1989). Another variable that affects locus of control is social class; higher socioeconomic class is associated with internal locus of control.

Since Rotter identified locus of control in the 1960s, research on the topic has advanced at a steady pace. Now researchers recognize that locus of control is multidimensional; that is, an individual may possess internal control in one area (i.e., academics—believing that she can control her academic outcomes) and external control in another arena (e.g., social relationships).

See also attitude, learned helplessness, positive emotions.

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Logotherapy

Logotherapy is an approach to psychotherapy introduced by humanistic/existentialist psychologist and psychiatrist Viktor Frankl. Frankl, who had begun his psychiatric career in the 1930s, was captured by Nazis in 1942 and spent several years in four death camps, including Auschwitz and Dachau. After surviving the camps, he wrote a now world-famous book, *Man's Search for Meaning* (1962), originally published under the title *From Death-Camp to Existentialism* (1946), in which he introduced and popularized his approach to psychotherapy and his approach to life, *logotherapy*.

Logotherapy is derived from the Greek word *logos* (meaning) and the word *therapy* (signifying treatment). According to Frankl, humans are motivated to seek meaning in their lives. In his book, Frankl cites research supporting his contention that meaning finding is a primary motivation for people. According to logotherapy, people can find meaning in three ways: creating a work or doing a deed,

2) by experiencing something or encountering someone; and 3) by the attitude we take toward unavoidable suffering" (Frankl, 1962, p. 133). To elaborate on each of these, first, we may find meaning through accomplishment or achievement. Second, meaning may be felt when experiencing much in life such as nature, beauty, goodness, or the loving of another human being. The last source of meaning requires further explanation. As Frankl describes, suffering is unavoidable in life. But we have a "uniquely human potential . . . to transform a personal tragedy into a triumph, to turn one's predicament into a human achievement" (Frankl, 1962, p. 135). He gives an example of a man who was suffering because his wife, whom he dearly loved, died. The man looked to Frankl for comfort and solace and, as is revealed through the session, for meaning. Frankl, after listening to the man's story of pain, rather than telling him something, asked a question: what would have happened if he had died and his wife had lived? The man replied that his wife would have suffered and mourned greatly. Frankl responded that since she died first, this suffering has been spared her. Viewing the situation this way, according to Frankl, the man was able to see the meaning in his experience: he had made a sacrifice, the sacrifice of suffering, so that his wife may not suffer.

As Frankl explains, the therapy worked not through changing an actual situation but rather through changing the attitude or point of view of the patient. Other psychotherapy approaches and general psychological theories also advocate healing and well-being through changing attitudes or beliefs. Examples include cognitive therapy and appraisal theory. Logotherapy is an effective form of psychotherapy. The Viktor Frankl Institute Web site is devoted to describing and promoting logotherapy and is a repository for logotherapy research studies and discussion of these studies.

See also appraisal, cognitive therapy and cognitive-behavioral therapy, humanistic psychotherapy, existential psychotherapy, Viktor Frankl.

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Loneliness

Loneliness is an unpleasant emotional state that occurs because of dissatisfaction with the quality of one's relationships. Lonely people may feel emotional pain, sadness, and emptiness and feel distanced from and misunderstood by other people. More technically, loneliness can be defined as a discrepancy between an individual's *desired* level and *actual* level of social contact. Loneliness is a subjective experience; therefore one can be alone but not lonely. Conversely, one may have many friends and other social contacts but still feel lonely.

Weiss (1973) identified two types of loneliness. *Emotional* loneliness occurs when an individual fails to have a close relationship or attachment such as a romantic partner or very close friend. *Social* loneliness arises when a person has no t[illegible] social group such as a group of friends or a social orga[illegible]on. [illegible]y suffer from

either type of loneliness or both. Improving the quality of one type of relationship (social or emotional) does not typically ameliorate the other type of loneliness.

Miller, Perlman, and Brehm (2007) review the research on personal demographic and social characteristics associated with loneliness. Loneliness occurs with greater frequency in some countries than in others. In one study that compared 18 countries, Italians and Japanese reported the highest levels of loneliness while people from Denmark reported the lowest levels. Citizens of the United States also reported high levels (ranking fourth; Stack, 1995, 1998). Unmarried people are more lonely than married people, but divorced and widowed people are more lonely than those who never married. When unmarried people are asked indirectly about loneliness (i.e., asking about relationships and feelings without actually using the word *lonely*), men report more loneliness than women. When asked directly, women report more loneliness than men (Pinquart, 2003). Most researchers consider indirect measures of loneliness more valid. The explanation for men's underreporting of loneliness when asked directly is that the stigma associated with loneliness is greater for men than for women. For men, emotional loneliness is most often remedied through a relationship with a woman; men's relationships with one another tend to involve relatively little self-disclosure and emotional closeness. Women's friendship relationships with other women can be quite close, involving a great deal of disclosure, and emotional loneliness for women may typically be remedied through either a romantic relationship with a man (or woman) or a friendship relationship with a woman.

Age is related to loneliness. Perlman's (1990) review of six surveys involving 18,000 people in North America revealed that in general, people are lonelier when they are adolescents or young adults than when they are middle-aged. Beyond the age of 40, loneliness tends to be associated with divorce, death of a spouse, or poor health.

Loneliness may be caused by both situational factors and an individual's personal characteristics. In a national survey of loneliness in the United States, people provided five major reasons why they were lonely (Rubenstein & Shaver, 1982): (1) having no spouse or sexual partner, (2) feeling different or misunderstood or having no close friendships, (3) being alone, particularly coming home to a house with no one there, (4) being forced into isolation (due to being homebound, hospitalized, or having no transportation), and (5) being dislocated (from moving, starting a new job or school, or traveling frequently). Notice that the research participants mentioned both situational causes (e.g., forced isolation, dislocation) and causes that are more likely related to personal characteristics (e.g., feeling different or misunderstood, no close friends, or no spouse or partner). Additionally, the participants described both emotional loneliness and social loneliness situations.

Personal characteristics associated with loneliness are both cognitive (thoughts, attitudes) and behavioral. Lonely people may have low self-esteem, viewing themselves as unworthy or unlovable; as a result, they may be resigned to their loneliness (McWhirter, 1997). People who are lonely may have negative views and attitudes toward other people (e.g., Check, Perlman, & Malamuth, 1985). They may have an attitude of mistrust toward others and a general negative attitude toward others (including disliking others). Negative or mistrustful attitudes may manifest in behaviors such as being unresponsive in interactions with others (e.g., Solano & Koester, 1989), failing to ask questions, responding slowly to what other people say, changing topics at inappropriate times, a lack of personal disclosure. Even individuals

who generally dislike other people crave social interaction and contact and experience emotional distress when lonely.

Lonely people can take action to attempt to improve their situations. Miller, Perlman, and Brehm (2007) make several helpful suggestions. First, lonely people can question their attitudes. A fear of rejection or disappointment may result in social withdrawal. However, little is lost if one forces oneself to interact, show interest in others, or engage in some self-disclosure. Adopting a positive attitude may result in positive social interactions. People tend to blame loneliness on their own personal inadequacies; however, situational factors likely play a part as well. It may be beneficial to consider situational factors that may be contributing to loneliness; it is generally not constructive to put all the blame on oneself. Third, once lonely people have considered and identified situational factors, they may think about how their attitudes are contributing to the problem and reconsider those attitudes. Individuals who think that people are selfish, uncaring, and untrustworthy may be creating a self-fulfilling prophecy. Instead, it is more helpful to try to find the positive qualities in others. Fourth, if the preceding advice does not lead to positive results, social skills training may be helpful. Another useful exercise involves reexamining one's attitudes and behaviors. For example, an individual who is attempting to heal loneliness by searching for a romantic partner might find a close friendship to be emotionally satisfying and personally enriching.

See also friendship, intimacy, relationships, shyness, social support.

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Loss

Bereavement is a state of sorrow over a loss or d[illegible]ed one; to be *bereft* is to be left alone or to experience a loss. According to M[illegible]riam-Webster, g[illegible]istress

caused by bereavement (by experiencing loss). Loss is associated with many life events and transitions, including illness, disability, infertility, miscarriage, loss of housing or employment, educational failure, war or natural disasters, abuse, relationship breakdown, divorce, addiction, migration, aging, and death of a loved one.

There are many ideas about the grieving process, among them theories about grief occurring in phases or stages. In 1961, British psychiatrist John Bowlby described three stages of grief based on young children's reactions to separation from parents: protest, despair, and detachment. Later he refined his stages and added a fourth to his theory of grieving in adults: numbness and disbelief, yearning and searching, disorganization and despair, and finally reorganization or recovery from bereavement (see Bowlby, 1980). In 1969, Swiss-born psychiatrist Elisabeth Kübler-Ross published *On Death and Dying*, which suggested that there are five stages when facing one's own terminal illness: denial, anger, bargaining, depression, and acceptance. Kübler-Ross's five-stage model has gained popularity, has been extended to dealing with any sort of loss (including death of a loved one), and has been incorporated into many mental health practitioners' treatment practices. However, most researchers now recognize that the five-stage model lacks empirical support. Responses to loss may include many different reactions, including those in the five-stage model. Reactions may occur in many orders or combinations and may vary depending on the bereaved person's mental state and circumstances (Archer, 1998).

Grieving is a normal process; it is an individual, unique, and highly personal experience. Depending on social context and personal experience, grief has potential for both personal deterioration and personal growth. Unless symptoms of grief become debilitating, causing significant distress over a prolonged period of time, grief will resolve on its own, without the need for intervention from a mental health practitioner. Complicated grief, on the other hand, does benefit from therapy. According to Australian psychologist Judith A. Murray (2001), complicated grief is more likely when the bereaved individual loses a child (including an unborn child), has an intellectual disability or other mental health disorder, sustains multiple losses simultaneously, sustains losses that occur through trauma or violence, or experiences a sudden loss (without time to prepare). Circumstances surrounding a loss—including cultural, social, and family contexts—influence the stress accompanying the grief reaction. For example, the response to a suicide may be different among members of cultures or religions that consider suicide a sin versus those that consider suicide an honorable action. Loss may threaten a person's sense of safety, security, and control (Murray, 2001).

Grief may by accompanied by many symptoms, including depressions, somatic symptoms (physical illness), and a higher risk for suicide. John Bowlby's work on attachment theory showed that even people who cannot fully understand the finality of death (e.g., young children and individuals with intellectual disabilities) are capable of experiencing grief. Individuals with intellectual disabilities may have a more complex grieving process, with a higher risk for emotional disturbance (e.g., sadness, anger, anxiety) and behavioral disturbance (e.g., irritability, lethargy, hyperactivity; Brickell & Munir, 2008). Multiple losses, which can complicate the grieving process, may affect individuals' health, marriages, employment, finances, and emotions (Mercer & Evans, 2006).

Ambiguous loss—such as when a loved one is missing or is presumed to be dead but no body has been found—freezes the grieving process. This can occur in the context of an abduction or a soldier who is missing in action. It can be especially difficult if some family members are still holding out hope that their missing loved one will be found, while other family members want to accept the loss to move forward with their lives. This type of ambiguity can be emotionally devastating for individuals as well as putting a great strain on families and relationships. Closure is impossible; family members have no choice but to live with uncertainty (Boss, 2007). An extended period of preparation for an expected loss is known as *anticipatory loss.* For example, caregivers of family members with dementia or terminal illness know that their loved one is expected to die but may not know how soon. Anticipatory loss may be accompanied by a complex mix of emotions, including sadness, anger, and feeling overwhelmed, tired, trapped, guilty, frustrated, and relieved. Individuals anticipating loss may feel powerless in the face of the inevitability of the loss (Green, 2006).

See also John Bowlby, depression, grief.

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Love

Love has interested thinkers from diverse disciplines since the beginning of writing (or before). The word *love* can mean many things, including feelings one has about people, animals, one's country, activities, foods, books, and much more. Scholars and researchers have tended to focus on love in the context of relationship. Love experts Reis and Aron (2008) have defined *love* as "a desire to enter, maintain, or expand a close, connected, and ongoing relationship with another person or other entity" (p. 80).

Early love researchers created love taxonomies. A widely known distinction between types of love, first proposed by Berscheid and Walster (1978), is between passionate love ("a state of intense longing for union with another," p. 9) and companionate love ("the affection we feel for those with whom our lives are deeply entwined," p. 9). The

usefulness of this categorization has been supported by research at various levels, including laypeople's conceptions of love, behavioral studies, and biological research. Another expedient theory has been Sternberg's (1986), which identified components of love: passion (an arousal state and longing for another person), intimacy (closeness to and emotional investment in another person), and commitment (attachment to a person and decision to be with her). In general, passion tends to be associated with passionate love, and intimacy and commitment tend to be associated with companionate love, although any of the three love features can be associated with either type of love (e.g., an individual can feel a sort of passion for a platonic friend—the passion is nonsexual and occurs primarily in a companionate relationship).

Leading figures in the history of science have explored concepts related to or processes involving love. John Bowlby and Harry Harlow, studying infant attachment, argued and provided evidence that the bond between infant and mother may set the stage for future love relationships for the child. Sigmund Freud ("the love doctor") proposed that our childhood experiences create our love templates. For him, an individual's first romantic relationship occurs around ages four to six, when the child develops an attachment to the opposite-sexed parent. The attachment is sensual and includes a passionate desire to possess the parent exclusively. The particular dynamic between child and opposite-sexed parent and child and same-sexed parent (who is the child's rival) will to some extent play out again in future romances. Charles Darwin asserted that sexual attraction is necessary for the survival of our species and thus sexual love is functional. This theorizing about the evolutionary basis of love opened up a large research area, leading to comparisons across species and studies on topics such as mate preferences and sexual mating strategies in both humans and other animals.

An evolutionary perspective on love has gained popularity. Theorists (e.g., Reis & Aron, 2008) have applied Berscheid and Walster's (1978) dichotomy within an evolutionary approach and have argued that both passionate and companionate love are helpful for survival of the species. Passionate love leads to attraction, which can be associated with individuals entering into mating relationships that are relatively long term—at least, long enough to lead to successful reproduction. Companionate love, which includes love between parents and love of parents for their children, increases the probability of survival of the child.

Recently, research on love has met with a resurgence. Reis and Aron (2008) predict that research will continue to be popular, addressing issues such as specific biological mechanisms associated with love, how love is related to culture, and love outside of romantic relationships. Reis and Aron also point out that love is associated with some negatives, which they call the "dark side" of love, including bereavement, unrequited love, jealousy, abandonment, and violence, and that these topics also need further study.

See also attachment, John Bowlby, Charles Darwin, evolutionary psychology (human sociobiology), Sigmund Freud, friendship, Harry Harlow, intimacy, jealousy, relationships.

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Lust

Lust is sexual desire: an interest in sexual contact with another person or even with other objects (e.g., animals, inanimate objects). Scholars have taken different positions regarding the origins of lust. Sigmund Freud (e.g., Freud, 1905/1910) and more modern theorists such as Kaplan (1979) viewed lust as a drive that originates within the individual who experiences it, possibly from biochemical sources. Other modern theorists (e.g., Verhulst & Heiman, 1979) have argued that lust is caused by the external object, for instance, an attractive person. A third view is that lust has both internal and external origins.

Lust differs from individual to individual. As Regan and Berscheid (1999) discuss, lust varies in both frequency and intensity across people. Additionally, people differ in regard to the specific types of sexual activities that they prefer and in the number of preferred sexual activities (i.e., some prefer more variety than others). Also, different people have different objects of desire. The list of possible objects is long: other people (same or opposite sex or both), numbers of other people (i.e., some are attracted to more people than others), specific body parts (e.g., one may have a fetish for feet), children, animals, inanimate objects, and so forth.

Scholars disagree about whether lust is technically an emotion. However, most agree that lust is often closely associated with an emotion: romantic love. Both Sigmund Freud and the early sexologist Havelock Ellis (1933/1963) believed that lust was a significant part of romantic love. Some researchers have studied the relationship between lust and romantic love. For example, Meyers and Berscheid (1997) asked research participants to identify people with whom they were in love and those to whom they felt a sexual attraction. They found that most people's list of attractive people was longer than their list of people toward whom they felt romantic love; they nearly always said that they were sexually attracted to people with whom they were in love but did not necessarily say that they were in love with people to whom they were attracted.

See also desire, Sigmund Freud, libido, love.

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M

Machover Draw-A-Person Test

The Machover Draw-A-Person (DAP) test is a projective personality test developed by American psychologist Karen Machover in 1949. In a projective test, an assessee (person taking a test) is presented with unstructured stimuli (inkblots, pictures of people) or tasks and asked to respond in some way (e.g., draw a picture, tell a story, complete a sentence). The assumption is that the assessee's responses will reveal something about her personality.

In the DAP, the assessee (either an adult or a child) is given a blank piece of paper and a pencil and is asked to draw a person. On a second sheet of paper, the assessee is asked to draw a person of the opposite sex. Next, the assessee may be asked any of a number of questions about the drawing, which Machover called *associations*, for example, asking about the age, marital status, schooling, self-concept, wishes, and habits of the person drawn. Machover made specific recommendations for interpretation of the test responses, utilizing the *sign approach*, wherein specific aspects of the drawing have very specific meanings. Machover instructed that general "feature placements" be evaluated, that is, size of the drawing, positioning, clothing, and so on. Particular characteristics of the figures are significant, for instance, large ears or eyes indicate paranoia, poorly drawn facial features indicate depression, dark shading indicates aggression, general lack of details may indicate psychosis or brain damage, and so forth.

The sign approach to interpretation has been strongly criticized (e.g., Lilienfeld, Wood, & Garb, 2000, 2001). Using a global approach may be more valid (Swenson, 1957; Lilienfeld et al., 2001). Rather than assuming that specific drawing features correspond directly to particular psychological problems, psychologists employing a global approach form a general idea of the assessee's overall adjustment through combining many features of the drawing. Thus the DAP likely has some validity for determining overall adjustment or mental health but has not demonstrated validity in terms of identifying particular psychological issues or providing specific diagnoses.

In 1991, Naglieri, McNeish, and Bardos published *Draw-A-Person: Screening Procedures for Emotional Disturbance*, a new scoring procedure to be used with children

with suspected emotional or behavior problems. This use of the DAP is helpful in identifying children with such issues (Naglieri & Pfeiffer, 1992). The DAP is not among the 20 most commonly used tests by clinical psychologists; however, a similar drawing test that was developed later, the House-Tree-Person Technique, ranks in the top 10, as do two other projective techniques, the Rorschach Psychodiagnostic Technique and the Thematic Apperception Test (Camara, Nathan, & Puente, 2000).

See also projective tests, Rorschach Psychodiagnostic Technique, Thematic Apperception Test.

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Major Depressive Disorder

Major depressive disorder (MDD) is a type of clinical depression. Like other types of clinical depression (e.g., bipolar disorder, seasonal affective disorder), MDD is characterized by sadness, feelings of emptiness, despair, anhedonia (loss of ability to experience pleasure), low self-esteem, apathy, low motivation, social withdrawal, negative or pessimistic thinking, irritability, and/or suicidal thoughts or attempts (Preston, 2006). Other symptoms may include sleep or appetite disturbances, weight gain or loss, early morning awakening, or agitation. Clinicians use the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000) criteria, clinical interviews, and other tools (e.g., Beck Depression Inventory, Children's Depression Inventory, Hamilton Depression Scale) to diagnose MDD. According to *DSM-IV-TR* criteria, symptoms must have persisted for at least two weeks and be accompanied by significant distress or impairment in functioning (e.g., social, vocational; American Psychiatric Association, 2000). In children, the predominant mood may present as irritability rather than sadness. Individuals with MDD may exhibit tearfulness, crying, brooding, anxiety, phobias, and physical complaints (e.g., headaches, stomach aches, joint pain). When depression is caused by outside situations or circumstances (e.g., death of a loved one, loss of a job), it is known as

exogenous depression; when there are no identifiable upsetting circumstances, it is known as *endogenous* depression. Depression that is primarily caused by a drug (e.g., alcohol, cocaine withdrawal), as a side effect of medication (e.g., steroids), through exposure to toxins, or as a direct result of a physiological disorder (e.g., thyroid disease) is not considered MDD. MDD that is precipitated by childbirth is known as MDD with postpartum onset (or postpartum depression).

Current estimates of lifetime prevalence of MDD range from 16 to 18 percent among adults in the United States (Kessler et al., 2003; Williams et al., 2007). MDD occurs twice as much in women as in men. Rates of MDD appear to be similar among ethnic groups; however, treatment rates are much higher among whites than some ethnic minorities (Williams et al., 2007). While only one-third of people in the United States seek treatment for symptoms of depression, treatment can be effective in up to 80 percent of those who seek treatment (Preston, O'Neal, & Talaga, 2008).

Depression is thought to be related to a number of factors, including environmental, biological, genetic, hormonal, and neurochemical factors. Depression may involve imbalance of certain neurotransmitters (chemical messengers in the brain), including serotonin, norepinephrine, dopamine, acetylcholine, and gamma-aminobutyric acid (GABA). Some depressed people have been found to have elevated levels of cortisol (a stress hormone), deficiencies in brain-derived neurotrophic factor (a substance involved in keeping neurons healthy), cell death in the hippocampus (a brain structure), or atrophy in the anterior cingulate (in the frontal lobe of the brain; Preston et al., 2008). Extreme stress (including severe early abuse or neglect), poor nutrition, decreases in physical exercise, and reduced exposure to sunlight can result in or exacerbate depression (Preston et al., 2008).

The biopsychosocial model of depression considers (and treats) biological (e.g., genetic, hormonal), psychological, and social (e.g., family, interpersonal) factors. Effective treatments for depression involve a combination of psychotherapy (e.g., psychodynamic, cognitive-behavioral), physical exercise, and medications. Antidepressant medications include selective serotonin reuptake inhibitors, tricyclics, monoamine oxidase inhibitors, and atypical antidepressants. Troublesome medication side effects may occur well before the onset of therapeutic benefits. Working closely with a qualified health care professional can help minimize side effects and increase benefits from medications and adjunctive therapies. Natural or complementary alternatives that have been explored for the treatment of depression include St. John's wort (*Hypericum perforatum*) and SAMe (S-adenosyl-L-methionine). Evidence supports the use of St. John's wort as an effective treatment for mild to moderate depression; it has not been found to be effective in treating severe depression (National Center for Complementary and Alternative Medicine, 2004). Studies found that SAMe was more effective than placebo but no more effective than standard antidepressant medication (Agency for Healthcare Research and Quality, 2002). There is a great deal of controversy regarding the efficacy, side effects, and potential drug interactions of other complementary treatments such as L-tryptophan (a natural antidepressant found in foods such as turkey, potatoes, and milk), 5-hydroxytryptophan, melatonin, tyrosine, amino acids, vitamins, and minerals. Electroconvulsive therapy has been found to be effective in severe treatment-resistant cases of depression (Preston et al., 2008). Experimental treatments include vagus nerve stimulation and repetitive transcranial magnetic stimulation. Some individuals

and their families find information and help through support groups (e.g., National Alliance on Mental Illness).

See also anhedonia, antidepressant, cognitive therapy and cognitive-behavioral therapy, complementary and alternative medicine, dysphoria, dysthymia, electroconvulsive therapy, endogenous depression, grief, light therapy, mood disorder, nutritional therapies, physical activity (exercise) for depression, postpartum depression, Prozac (fluoxetine), psychodynamic psychotherapy and psychoanalysis, sadness, seasonal affective disorder, selective serotonin reuptake inhibitor, serotonin, St. John's wort.

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- Major depressive disorder (MDD) is the leading cause of disability in the United States for ages 15–44.
- MDD affects approximately 14.8 million American adults, or about 6.7 percent of the U.S. population aged 18 and older, in any given year.
- While MDD can develop at any age, the median age at onset is 32.
- MDD is more prevalent in women than in men.

Source: http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america.shtml

Abraham Maslow (1908–1970)

Abraham Maslow was born in Brooklyn, New York, the first of seven children. His parents were Russian Jewish immigrants, and his father owned a barrel manufacturing company. He was lonely and bookish as a child. He reported that neither

parent showed him much attention or warmth; his anger about the perceived neglect was directed most at his mother, whom he described as "a pretty woman—but not a nice one" (Wilson, 1972, p. 31).

Although his parents were uneducated, they encouraged education in their children. Maslow and his new bride, Bertha (a first cousin), moved to Wisconsin so that he could attend the University of Wisconsin, where he earned a BA, an MA, and a PhD, all in psychology. Maslow was Harry Harlow's first PhD student, and his dissertation focused on dominance hierarchies in monkeys. After completing his education in 1934, he returned to the East Coast, taking a teaching position at Brooklyn College after a few years of research work at Columbia University. Years later, he moved to Brandeis University, where he served as chair of the psychology department from 1951 to 1969.

Maslow's marriage to Bertha was a happy one, and they had two daughters. After the birth of their first child, Maslow began to change his approach to psychology, moving away from his behavioral training and toward a new approach in psychology, humanism, which emphasizes that people are basically good and possess free will. He developed an interest in the healthy person, the "best specimens." He idealized some of his professors, in particular, anthropologist Ruth Benedict and Gestalt psychologist Max Wertheimer. He saw them as truly wonderful people, a contrast to his parents, who so disappointed him. He tried to understand Benedict and Wertheimer through thinking and writing about them. He began to see that the two had much in common. This realization led him to believe that there might be a prototype of a healthy person, and he began to look for commonalities among people whom he viewed as healthy.

Maslow himself suffered from anxiety and insecurities. Although he had earned the respect of many of his peers—he was elected president of the American Psychological Association (APA), for example—he nonetheless experienced intense stage fright. After a public presentation of his work, he sometimes had to take bed rest for several days (A. H. Maslow, 1979, p. 99). He resigned from the APA presidency after only one year (the usual term is two years), an unprecedented action, because of his fear of public speaking. In 1970, within two years of his resignation from the APA presidency, Maslow died of a heart attack at age 62.

Maslow is well known across academic disciplines for two main contributions. The first is his theory of motivation, the hierarchy of needs. Maslow identified needs that motivate all humans: physiological needs (e.g., hunger, safety, and security), belongingness and love needs, esteem needs (including self-esteem and esteem from others), and the need for self-actualization (the desire to achieve one's full potential). These motives are arranged in a pyramid or hierarchy such that the lower needs (beginning with the physiological) must be sufficiently addressed before higher ones arise and become the focus of an individual's being and experience. Maslow was most interested in the highest level of needs, the self-actualization needs, which he believed are natural to humans but whose realization depend on the lower needs being met. Thus one can become somewhat stuck at a lower level, making it difficult to self-actualize. For instance, some individuals become obsessed with safety and security and devote much energy to saving money, worrying about physical safety, and so on. In fact, since safety and security largely consume their conscious thoughts, these individuals do not even think about self-actualization. As another example, some

people become stuck at the love and belongingness stage, feeling that they have never really been unconditionally loved or accepted. The consciousness of these individuals is filled with regret regarding a perceived lack of love, and self-actualization does not enter much into their experience. Maslow was interested in helping people to become unchained from obsessions such as these and to free themselves to their natural self-actualization.

Maslow's other major contribution is his description of the healthy personality, also called the *fully functioning person* or the *self-actualizing person*. This approach in psychology was a fairly novel one—Maslow was focusing on the best qualities of humans rather than on psychopathology. After considering the commonalities of his admired professors, Benedict, Wertheimer, and several others whom Maslow viewed as healthy, he identified 20 characteristics of the fully functioning person. Examples include a more accurate perception of reality (neither too optimistic nor too pessimistic), an acceptance of self and others (does not expect perfection, accepts human foibles), an unhostile sense of humor, and social interest (a desire to help others).

Maslow, like Carl Rogers, was one of the founders of the humanistic psychology movement that began in full in the 1940s and 1950s, a true alternative approach to Freudian psychology or behaviorism. Additionally, the modern interests in the healthy personality and in positive psychology can be at least partially traced to Maslow. Maslow authored numerous books and articles. Some of the most informative and provocative books by or about him include *The Healthy Personality* (A. H. Maslow, 1977), *The Farther Reaches of Human Nature* (A. H. Maslow, 1993), and *Abraham H. Maslow: A Memorial Volume* (B. G. Maslow, 1972).

See also behaviorism, Harry Harlow, humanistic psychotherapy, motivation, positive psychology, Carl Rogers.

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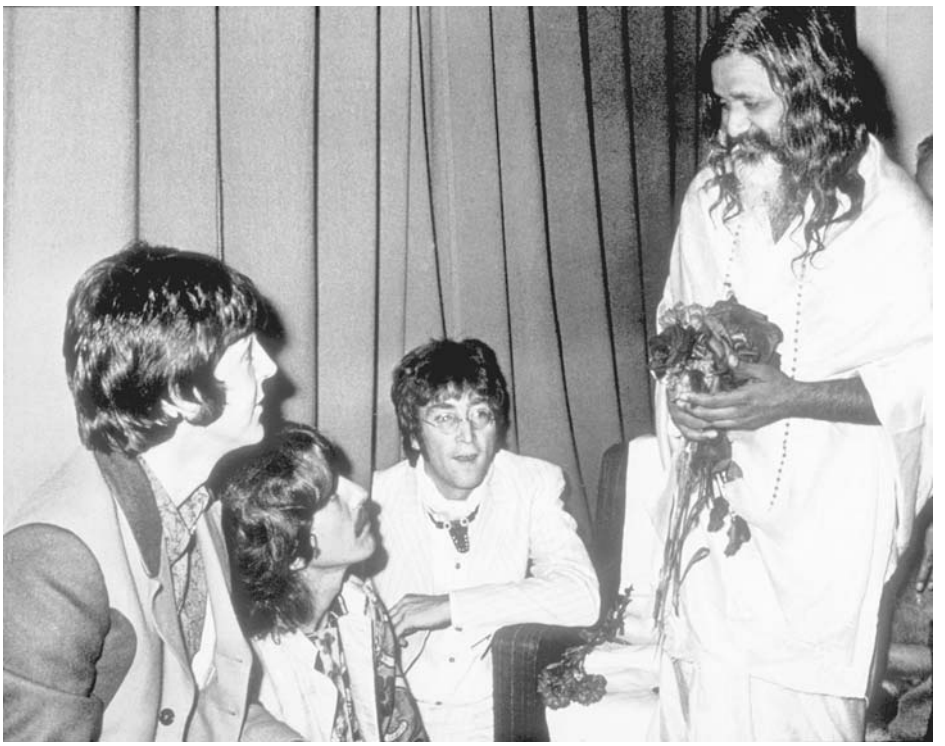
Abraham Maslow worked hard to establish recognition for humanistic psychology as an independent discipline—equal in worth to the Freudian and behaviorist disciplines in psychology—within the American Psychological Association. His fight was, by his account, a tough one. In a seminar that he gave at Brandeis University in 1968, he displayed a Saul Steinberg drawing and

presented his feelings and associations to the drawing. On the right side of the drawing is a figure on horseback, holding a spear. The horse, person, and spear are all simply drawn in stick-figure style. On the left side is a collection of eight large, three-dimensional geometric figures (cube, sphere, triangle, etc.). The figure on horseback is riding toward the geometric figures, ready to attack them with his (or her) flimsy spear. Maslow revealed that when he first saw the drawing, he laughed his head off. He said that it reminded him of himself, in particular, his fight with the American Psychological Association. Maslow said that the geometric figures were cold and mechanistic, like the incarnation of the American Psychological Association against which he was fighting. The figure on horseback was a hero (himself), tragic in some ways because, at least on the surface, he would lose the battle against the much stronger foe. Maslow believed that fighting for what one believed, even in instances where the odds seem overwhelming, is nonetheless admirable and worthwhile (Monte, 1980).

Meditation

Meditation is a practice that involves calming the mind and the body and has a history of at least 2,000 years, having descended from Zen Buddhism and yoga. Examples of practices include Zen meditation, Chakra yoga, mantra meditation, transcendental meditation, breath-counting meditation, walking meditation, and others. Meditation involves a control of one's attention such that the attention is either focused or expanded. In focused attention, the meditator may concentrate on a sound or a single visual stimulus. Mantra meditation, silently repeating a sound (i.e., "peace," "om," or another word or phrase) to oneself, is the most common form of meditation throughout the world (Davis, Eshelman, & McKay, 2008). Visually concentrating on a mandala, a colorful geometric figure, is another type of focused meditation. Walking meditation is usually practiced as a form of expanding one's attention; as the meditator walks, she attends to all stimuli external to her own thoughts or feelings—the surrounding environment, the act of walking, physical sensations of walking, and so on. Goldstein (2003) stated that three central concepts unify the diverse meditation approaches: mindfulness (awareness), compassion, and nonclinging.

A goal of meditation is to allow an individual to simply "be" in the present moment, focusing on something outside of the self without worrying about the past or future. While meditating, one reduces the typical mental chatter that includes worrying, planning, fantasizing, and remembering. The idea is that practicing meditation regularly leads to a calmer state of mind that extends to all of one's life experience. A number of books provide how-to instructions for various types of meditation, including Girdano, Dusek, and Everly's (2009) *Controlling Stress and Tension*, Davis et al.'s (2008) *The Relaxation and Stress Reduction Workbook*, and Yogi's (1963/1995) *Science of Being and Art of Living: Transcendental Meditation.* Practicing most types of meditation involves sitting quietly in a comfortable position (ideally, in a quiet environment). Stretching muscles or performing progressive muscle relaxation (tensing and relaxing of muscles) can help ensure that the muscles are relaxed. It is probably best



Left to right: Paul McCartney, George Harrison, and John Lennon of the Beatles, backstage with the Maharishi Mahesh Yogi after he gave a lecture on transcendental meditation at the Hilton hotel in London, August 25, 1967. Attention from celebrities such as the Beatles increased the popularity of meditation in North America in the 1960s and 1970s. (Hulton Archive/Getty Images)

for inexperienced meditators to close their eyes. Next, one should focus on quieting the mind. This is an area where practices may differ. One approach is to focus on a mantra, a relaxing word one states to oneself. The individual should try not to get carried away with thoughts, simply focusing on the mantra. If she notices that she is having a thought, she may push it away gently or allow it to pass through her. This is the attitude that one should have for the duration of the meditation. An individual may meditate for only 5 minutes if that is what works, but ideally, meditation should last at least 20 to 30 minutes. The preceding description is consistent with transcendental meditation, which was developed in the 1950s by Maharishi Mahesh Yogi to make meditation more accessible to Western cultures.

Regular meditation is beneficial in a wide variety of ways. Roth (1994) reviewed 500 studies from 35 different countries spanning 25 years and concluded that meditation can reduce stress, reduce insomnia, increase happiness and self-esteem, reduce anxiety and depression, and produce a number of other positive effects. The benefits of meditation were discussed at the 2004 annual meeting of the Mind and Life Institute on Destructive Emotions, a meeting of scientists and spiritual leaders including the Dalai Lama. Associated writer Begley (2007), who attended the conference, states, some types of meditation can effectively treat depression and ob-

sessive-compulsive disorder. Additionally, she describes how meditation appears to change the structure of the brain. The right prefrontal cortex, which tends to be associated with a state of happiness, is larger in meditators than in nonmeditators. Additionally, the left prefrontal cortex, which is associated with negative emotions, is smaller in meditators. Continued study in this general field, neuroplasticity (the changing of brain structure, including growth of new brains cells), may reveal additional findings that support the positive attributes of meditation and other stress-management techniques.

See also Buddhism, mindfulness, stress, yoga.

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Memory and Emotion

Conscious recollections of experiences are known as *declarative* or *explicit* memories. Explicit memories can be recalled and described verbally. *Implicit* (nondeclarative) memories are created subconsciously, for example, through fear conditioning. Implicit memories may form in response to dangerous or threatening situations. Stress and severe trauma are imprinted on the brain, sometimes bypassing explicit memory circuits and imprinting on implicit memory systems. Emotional memories (implicit memories that evoke emotional feelings) and memories of emotional experiences (explicit memories) sometimes occur together, but they activate different systems in the brain. Explicit memory formation involves the hippocampus and temporal lobe of the brain, while implicit memories involve the amygdala. So when recalling the circumstances of a trauma (e.g., an auto accident), the explicit memory system (temporal lobe and hippocampus) is engaged. When remembering how frightening the auto accident was, with accompanying physiological changes (heart pounding, sweating), the implicit memory system (amygdala) is activated (LeDoux, 1996).

Posttraumatic stress disorder symptoms in individuals suffering from this condition may be triggered by situations that are perceived as associated with a previously experienced traumatic event. There is controversy about the accuracy of traumatic

memories. Some researchers question the accuracy of explicit traumatic memories. Other research finds that the explicit details of a traumatic event tend to be accurate, but implicit memory for the associated emotions and context is less accurate. Some research shows that intense, negative implicit memories (e.g., fear, horror) are accurate and stable over time, while implicit memories of other emotions are less accurate (Zoellner, Sacks, & Foa, 2001).

Individuals with phobias (and other anxiety disorders) repeatedly experience situations or objects as threatening. Certain types of psychotherapy (e.g., systematic desensitization) may help desensitize individuals who have phobias from responding to triggering situations as threats. While the fear is under control, the memory that originally provoked the fear response remains. A new stress or traumatic experience can rekindle the learned fear, causing the phobia to return (LeDoux, 1996).

Emotional life events are often remembered more vividly than everyday events. *Item memory* describes memory for content (e.g., names, faces, pictures, words), while *source memory* is memory for context (the time, place, situation, perceptions, tone of voice, emotional context). Overall, older adults perform more poorly on memory tasks than younger adults. Generally, source (context) memory tasks are more difficult than item memory tasks—it is easier to remember what someone said in a situation than to remember the context (sounds, smells, and feelings) of the situation. A study with young adults (average age 21 years) and older adults (average age 75 years) found that emotionally charged items (words and sentences) were better remembered than neutral (nonemotional) ones. In one experiment, sentences were spoken in an emotional or neutral tone of voice. Emotional tone of voice enhanced source (context) memory, more so for young adults than older adults. However, the content of the sentences (whether they were neutral or emotional) had no effect on source memory for either age group (Davidson, McFarland, & Glisky, 2006).

In developmental studies of memory and emotion with children aged 6 through 11 years, children were told stories and shown accompanying illustrations; then they were asked what happened in the stories. It was found that children remembered negative emotions (e.g., madness, guilt) more easily than positive emotions (e.g., happiness, pride) and that girls were more likely to remember emotions than boys (Davidson, 2006).

Individuals with major depressive disorder (MDD) have more difficulties with memory and emotion-processing tasks than individuals without depression. It has been found that individuals with MDD have poorer memory overall and selectively recall more negative than positive information (known as *emotional memory bias*). While overall memory deficits in individuals with MDD are more pronounced in elderly people than in younger individuals, both young and older individuals with MDD exhibit emotional memory bias (Pine et al., 2004).

Neurological disorders that affect memory (e.g., dementia, Alzheimer's disease, traumatic brain injury) may be accompanied by difficulty regulating or controlling emotions. Similarly, disorders or conditions that affect emotions (e.g., depression, anxiety) may affect memory abilities. Studies of these disorders have highlighted the interconnections between the emotion (e.g., limbic system, amygdala, hippocampus) and memory systems in the brain (LeDoux, 1996).

See also amygdala, fear, hippo[illegible]ous, major depr[illegible] disorder, phobia, post-traumatic stress disorder, stress [illegible]nat[illegible]s[illegible]ation.

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Menopause

When a woman's ovaries stop producing eggs and female hormone levels drop, her menstrual periods cease, and she experiences menopause. Menopause—signaling the cessation of reproductive fertility—usually occurs during midlife (usually between the ages of 45 and 55; Xu et al., 2005). Menopause can occur as a normal part of aging or can be a result of surgery (e.g., hysterectomy), chemotherapy, or radiation. Menopause, from the Greek roots *men* (month) and *pauein* (to bring to an end), literally means "end of monthly cycles." The period of time leading up to menopause, known as *perimenopause*, is marked by irregular menstrual cycles. Other menopause symptoms may occur during perimenopause. The perimenopause period may last between 1 and 10 years (average is 4 to 5 years). Menopause (or *postmenopause*) is said to have occurred after there have been no menstrual periods for 12 consecutive months (Twiss et al., 2007).

Estrogen (estradiol) and progesterone are female hormones (although estrogen is also found in males, as testosterone is found in females). Female hormones serve many functions. These include promoting the formation of female secondary sexual characteristics (e.g., breast development), onset of menstruation, supporting pregnancy, metabolism, and maintenance of bone density. Estrogen levels in females may affect energy level and mood. Fluctuating levels of estrogen and other (e.g., serotonin and beta-endorphins) hormones may manifest as mood swings, depression, anxiety, or irritability at different points in the menstrual cycle (Dickerson, Mazyck, & Hunter, 2003). Female hormones decrease naturally with age.

While some women experience menopause symptoms, including depression, irritability, mood swings, decreased libido, sleep problems, night sweats, and hot flashes, many women have no symptoms (Liu et al., 2009). Women may also experience loss of bone density during and after menopause. Symptoms may vary according to overall health or the existence or severity of preexisting symptoms (e.g., premenstrual syndrome). Menopause symptoms may also vary by culture, social group, and ethnicity (Xu et al., 2005).

Some women use hormone replacement therapy (HRT) to treat menopause symptoms. HRT consists of female hormones, usually in pill or skin patch form. HRT has been promoted as a means to treat menopausal symptoms and prevent loss of

bone density. However, a large study in 2002—the Woman's Health Initiative—raised concerns about the long-term safety of HRT and breast cancer (Rossouw et al., 2002). Some women use natural treatments for menopause symptoms, including botanicals (black cohosh, dong quai root, ginseng, kava, red clover, and soy) and dehydroepiandrosterone (DHEA), a dietary supplement. However, there is little good-quality research to support the safety and effectiveness of these alternative treatments (National Center for Complementary and Alternative Medicine, 2009). Women may also use physical exercise, calcium supplements, and social support to help them deal with the symptoms and risks associated with menopause.

The male equivalent of menopause, known as *andropause*, is a midlife condition experienced by some men. Although men do not have monthly menstrual cycles, their testosterone (male hormone) levels drop. Male testosterone levels affect sexual functioning, energy level, physical agility, bone health, and mood.

See also hormones, mood swings.

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Millon Clinical Multiaxial Inventory

The Millon Clinical Multiaxial Inventory (MCMI), developed by American psychologist Theodore Millon and first published in 1969, is one of the most widely used of all personality tests. Its primary utility is to aid in diagnosis of mental disorders. The MCMI is now the main competitor to the Minnesota Multiphasic Personality Inventory (MMPI), which has been the most commonly used diagnostic personality test for several decades.

The MCMI consists of 175 that assessees (people taking a test) complete, typically taking about 25 mutes. The items aed on 27 primary scales.

Most of the scales measure mental disorders that are listed and described in the official diagnostic manual for mental disorders in the United States and some other countries, the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994). The scales are classified into five categories: clinical personality patterns and severe personality pathology (each represents *DSM-IV* personality disorders), clinical syndromes and severe clinical syndromes (each represents *DSM-IV* clinical disorders), and modifying indices. Modifying indices provide general characteristics of the assessee that may interact with disorders, rather than listing disorders per se. These general characteristics may provide useful information so the clinician may more thoroughly understand the client to provide appropriate treatment. Examples of scales include the personality disorders Avoidant, Antisocial, Compulsive, Borderline, and Paranoid, the clinical disorders Anxiety, Bipolar: Manic, Alcohol Dependence, Major Depression, and Delusional Disorder, and the modifying indices Disclosure and Debasement.

Compared to utilizing the MMPI for diagnosis, use of the MCMI is associated with a few advantages, as described by Hogan (2008). First, MCMI scale scores that are generated are highly compatible with *DSM-IV* classifications. Second, the MCMI is much shorter than the MMPI (176 items compared to 567 items). This is important. A typical person may be loathe to complete a questionnaire with 567 items (which usually takes about 60 to 90 minutes), and this task may be even more challenging for some individuals who are diagnosable with a mental disorder. Third, the MCMI utilizes base-rate scores for its scales, which the MMPI generally fails to do. MMPI scale scores are flagged as potentially clinically significant on any scale (Depression scale, Schizophrenia scale, Paranoia scale, etc.) equally, regardless of the frequency with which the disorder exists in the population. Typically, a score is flagged for an individual if it is within the top 2 to 7 percent or so of scores on that scale. Disorder rates vary greatly in the population; about 0.5 to 1 percent of the population is diagnosable for schizophrenia, whereas major depression is exceedingly more common, affecting up to one-third of the population in terms of lifetime risk. When MCMI scores are identified as potentially clinically significant, the base-rate information has already been considered prior to the identification.

A disadvantage of the MCMI is its close connection to the *DSM.* The *DSM* itself has been criticized, and many flaws of the *DSM* are reflected in the MCMI. For instance, Cooper (2005) has criticized the categorical system of mental disorder classification utilized in the *DSM.* Additionally, the *DSM* changes regularly, and with these changes, the MCMI must change. Thus the MCMI-I was published after *DSM-II* was published. When the *DSM-III* came out, the MCMI-II was published. In 1994, The MCMI-III was created to coincide with the *DSM-IV.* As Hogan (2008) states, the new MCMI versions are produced as counterparts to the *DSM*, without attention to a critical evaluation of the changes that occurred to the *DSM*; Millon and his colleagues place a great deal of faith in the validity of the *DSM.* A second disadvantage is the large number of scales (27) that are derived from relatively few items (176). This creates some conceptual and statistical issues that are beyond the scope of this book.

The MCMI ranks as the 10th most frequently used test by clinical psychologists (the MMPI is second and the Wechsler Adult Intelligence Scale is first; Camara, Nathan, & Puente, 2000). Time will tell whether the strengths of the MCMI are

sufficient to convince clinicians to utilize it more frequently than they employ the longtime standby in clinical personality assessment, the MMPI.

See also Diagnostic and Statistical Manual of Mental Disorders, Minnesota Multiphasic Personality Inventory.

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Mindfulness

Being mindful means being aware in the present moment. The awareness may be of one or more aspects of the inner world (body sensations, emotions, or thoughts) or of what is going on in the outer world. One experiences this awareness as if one is a detached observer, with acceptance, with compassion, and without judgment. A purpose of practicing mindfulness is to realize that all the experiences and stimuli of which one is aware are transitory, and they do not define the person (i.e., "thoughts are just thoughts"). If one is able to practice being an objective, impartial observer, one is less likely to get caught up in negative thoughts and emotions, which may play over and over in the mind like a tape recorder. Ultimately, the purpose of mindfulness is a positive state of being, which includes feelings of peace and acceptance.

The concept of mindfulness dates back 2,500 years ago to ancient Buddhism. Various forms of meditation involve achieving a state of mindfulness. In the past few decades, Western scientists and mental health practitioners have adapted mindfulness philosophy and practices to improve the quality of life of people in the modern world.

In *Thoughts & Feelings: Taking Control of Your Moods and Your Life*, McKay, Davis, and Fanning (2007) describe many examples of mindfulness techniques that are accessible for most people. One simple example is "mindful breathing." To begin, one lies down and closes one's eyes. Breathing should be deep but natural. When breathing has become rhythmic, one should observe as much about one's breathing as possible. Notice how cool the air is as it passes through the nose, then throat, then lungs. Pay attention to the sensations of the diaphragm and belly. Listen to any quiet noises that the air may make when passing through the nose, throat, or lungs. If it is

helpful, one may add a mantra such as saying "accept this moment" or "peace" during inhalations and exhalations. McKay, Davis, and Fanning recommend doing this technique twice a day. It is hoped that after a few days, one's spontaneous thoughts and emotions may change in positive ways.

Positive psychologists, who study the best in human nature and who promote positive psychological functioning, have developed an interest in mindfulness. They view mindfulness as a means to increase novelty in people's lives. Being mindful can help people to view the world and themselves in new ways, which may mean breaking away from automatic, negative habits and becoming creative; people may begin to see things from outside the box. For example, a mindless person would approach a problem the same way each time, in an unthinking, automatic fashion, even if the approach results in negative consequences. People's interpersonal relations sometimes operate in this way. A mindless person who is frustrated by the spending habits of her spouse may try to solve the problem with threats and continue to use threats for years, even though this never works. A mindful person would step back from the problem and try something different such as rewarding her spouse for good (thrifty) behavior.

In addition to positive psychologists, other psychologists have seen the value and potential applications of mindfulness. Timothy Miller, in *How to Want What You Have* (1996), argues the merits of an attitude that includes attention (his word for mindfulness), compassion, and gratitude. He says that it is difficult for humans to end the cycle of constantly wanting more but that learning how to appreciate what one has is worth the effort. Cognitive and cognitive-behavioral psychotherapies apply principles of mindfulness; the mechanism for personal change in these therapies is modifying one's ways of thinking through first becoming mindful of the ways of thinking.

More recently, applications of mindfulness have been put to empirical test. A frequently studied form of treatment based on mindfulness, *mindfulness-based stress reduction*, developed by Stanford psychologist Jon Kabat-Zinn, has been studied as an effective treatment for a variety of conditions, including anxiety, depression, and chronic pain (i.e., Grossman, Tiefenthaler-Gilmer, Raysz, & Kesper, 2007). In a review of studies on mindfulness, Bishop (2002) concluded that mindfulness techniques and treatments are promising, but very few studies have been rigorous, utilizing randomized, controlled designs. Interest in mindfulness has now spanned centuries, cultures, and disciplines.

See also acceptance, Buddhism, cognitive therapy and cognitive-behavioral therapy, meditation, positive psychology, rational emotive behavior therapy.

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Minnesota Multiphasic Personality Inventory

The Minnesota Multiphasic Personality Inventory (MMPI), a success when it was initially published in 1942, remains the most widely used of all measures of abnormal personality in the world. The authors, psychologist Starke Hathaway and neuropsychiatrist J. Charley McKinley, developed the test to aid in the diagnosis and understanding of individual psychiatric patients. Currently the MMPI has many uses. Consistent with Hathaway and McKinley's purposes, it is a common tool in clinical assessment of psychiatric inpatients, outpatients receiving psychiatric or psychotherapy services, and students who utilize college counseling centers. The MMPI is also commonly used in employment contexts, for instance, for screening applicants for jobs that have a public safety element such as law enforcement, nuclear power plant operation, and piloting of airplanes. The MMPI has a number of forensic applications, including assessments of competency to stand trial, insanity, and parental fitness (i.e., child custody cases) and evaluations for personal injury and disability claims. It may also be utilized as part of a test battery (a collection of tests as part of a comprehensive assessment) assessing neuropsychological functioning.

One of the two current versions of the MMPI, the MMPI-2, published in 1989, is an inventory consisting of 567 statements to which the assessee (person taking the test) responds with "true" or "false" (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). Examples of items on the original MMPI include "At times I feel like picking a fist fight with someone," "I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first," "I sometimes tease animals," "Often I feel as if there were a tight band around my head," and "Everything is turning out just like the prophets of the Bible said it would." The items are typically scored by a computer, and a profile on the assessee is created. The standard profile consists of scores on 10 clinical scales and 4 validity scales. Eight of the clinical scales measure psychiatric categories that existed in 1942 and that currently exist, although not necessarily with the same label: hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, psychasthenia, schizophrenia, and hypomania. The two remaining clinical scales, Masculinity-Femininity and Social Introversion, although not intended as measures of psychopathology per se, are helpful in gaining an understanding of the assessee. For instance, each of these scales interacts with other scales in ways that help clarify the individual's pathology or presenting problems.

The presence of validity scales is one of the aspects of the MMPI that contributed to its extreme popularity. These scales are used to identify ways in which the profiles may have questionable validity. One of the validity scales, Infrequency, assesses an individual's tendency to appear psychopathological or unfavorable, or problems with taking the test (e.g., reading problems, careless responding). Other validity scales are Lie, which measures the assessee's attempt to appear highly moral, and Correction, which assesses an individual's [illegible] to limit disclosure to others.

The method used to develop the MMPI and MMPI-2, called empirical criterion keying, became a standard method of test construction. This approach was motivated by the awareness that an individual who is taking a test of abnormal personality may respond in a dishonest fashion. In the empirical criterion keying method, no assumptions are made that the assessee is being honest or that responses are consistent with the assessee's true behavior, feelings, or thoughts.

The development of the MMPI (and later the MMPI-2) began with the creation of hundreds of items. Hathaway and McKinley wrote some items because they believed the items would differentiate between people with mental disorders and those without mental disorders. Other items were simply made up. Next, in creating each scale of the MMPI and MMPI-2, two groups of people were utilized. The *clinical* group consisted of individuals who had been diagnosed with the mental disorder represented by the scale (e.g., depression); the second (*normative*) group was presumed to represent the general population. Both groups were given the hundreds of statements that Hathaway and McKinley had written. If a particular statement differentiated clinical (e.g., depressed) people from the general population, the statement was retained for that particular clinical scale. Take, for example, the statement "I like to go shopping on the weekend." If depressed people tended to respond in a particular direction (e.g., false) and the general population tended to respond in the opposite direction (e.g., true), then that statement became a part of the Depression scale. Hathaway and McKinley were not concerned with why a clinical sample reliably responded to a particular item in a particular way, only that their responses distinguished them from the general (normative) population sample. Thus validity was automatically built in to the MMPI. At the same time, this method of test construction has been criticized by people who are interested in understanding why.

By the 1970s, it became clear that there were problems with the original MMPI, prompting creation of the MMPI-2. One issue was the original comparison or normative group. This group was unrepresentative of the general population, coming largely from the Minneapolis, Minnesota, area. All were white, and most were married, averaging age 35, with eight years of education. A second issue was the content of some of the test items. Some were outdated and people did not understand them (e.g., "I like to play drop-the-handkerchief"); some included sexist language; and a disproportionate number referred to Christian beliefs, sexual behaviors, or bladder or bowel functions. Thus the MMPI restandardization project was created in the early 1980s by the publisher of the MMPI. This project focused on producing a representative sample of the population as a comparison group for developing the scales and on updating and reinvestigating the test items. The final sample was ethnically diverse, ranging in age from 18 to 85, with a range in amount of formal education, and coming from several U.S. states: California, Minnesota, North Carolina, Ohio, Pennsylvania, Virginia, and Washington. The general demographic composition of the sample was based on U.S. Census data from 1980. A number of test items were slightly rewritten, 550 original items were retained, and 154 new items were added to the pool. Next, creation of each scale paralleled the original method: items were administered to both clinical and normative (comparison) samples. Those items that differentiated the particular clinical group (e.g., depressed people) from the general population sample were retained for the relevant (e.g., Depression) scale.

The MMPI-2 is appropriate for people 18 years old or older who read at an eighth-grade level or better. In addition to the 10 clinical scales and validity scales

described earlier, other scale scores can be derived from the MMPI items. These additional scales include the MacAndrews Alcoholism Scale, the Anxiety Scale, the Repression Scale, and the Marital Distress Scale.

Compared to other measures of abnormal personality, use of the MMPI-2 has both benefits and drawbacks, as discussed by Nichols (2001). Some benefits include that (1) the test was developed in a sophisticated fashion, creating built-in validity of the scales; (2) the standardization sample (comparison group of people used to test the items) was ethnically, socioeconomically, and geographically diverse; (3) a large number of studies (over 10,000) has assessed the reliability and validity of the test, and most experts conclude that it is a sound test; and (4) test results produce a great deal of clinical information about the assessee. Some drawbacks include the following: (1) accurate results require at least an eighth- or ninth-grade education and some degree of cooperativeness on the part of the assessee; (2) meaning of high scores on scales is not entirely clear—high scores may indicate either high probability of the disorder or greater severity of the disorder; and (3) most test items appear on more than one scale, leading to high intercorrelation between scales.

The second current version of the MMPI is the MMPI-2-RF (*RF* stands for "Restructured Form"), released by Pearson Assessments in 2008. This version was developed with statistical methods that were not utilized during the standardization in the 1980s. It consists of 338 items scored on a set of scales different from but related to the MMPI and MMPI-2 scales. The nine restructured clinical scales that replaced the MMPI and MMPI-2 clinical scales are Demoralization, Somatic Complaints, Low Positive Emotions, Cynicism, Antisocial Behavior, Ideas of Persecution, Dysfunctional Negative Emotions, Aberrant Experiences, and Hypomanic Activation. Both the MMPI-2 and the MMPI-2-RF are currently in use. Some experts prefer the MMPI-2 to the MMPI-2-RF for a variety of reasons, including that decades of research are available on MMPI-2 scales. Other experts prefer the newer MMPI-2-RF, arguing that the scales are superior, more pure (statistically more sound) versions of the original scales, leading to more comprehensible interpretation of abnormal personality. A special issue of the peer-reviewed *Journal of Personality Assessment* (Meyer, 2006) was devoted to a debate between proponents of the two versions.

The fate of the MMPI-2 versus the MMPI-2-RF remains unclear. However, the MMPI and its progeny remain the most widely researched and widely used of all measures of abnormal personality in the world.

See also Millon Clinical Multiaxial Inventory.

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Sullivan, L., & Arnold, D. W. (2000, October). *Invasive questions lead to legal challenge, settlement and use of different test*. Retrieved from Society for Industrial & Organizational Psychology (American Psychological Association Division 14) Web site: http://www.siop.org/tip/backissues/TipOct00/24Sullivan.aspx

- Three major test publishers initially rejected the MMPI; University of Minnesota Press agreed to publish it if the authors would pay for half the publication cost.
- Hathaway suffered a cerebral hemorrhage in 1945 at age 53, losing the ability to express emotion. Hathaway attempted suicide by cutting his throat; he was unsuccessful and died five years later.
- In 1991, Target retail stores were sued for using the MMPI as part of a screening test for hiring unarmed security guards (*Soroka v. Dayton Hudson*, California Court of Appeals, 1991). Plaintiffs alleged that the personality test was a violation of their privacy. The parties settled out of court. In another case, two former Rent-a-Center (RAC) employees sued RAC for use of a management test that included the MMPI (*Staples, Hadley, Ferrando, Allen and Fralin v. Rent-A-Center, Inc.*, No. C 99-2987 MMC, 1999). Plaintiffs expressed concern about the MMPI's inquiries about sexual practices, religious beliefs, and sexual orientation. They also objected that profiles based on test results contained gross and unfounded generalizations about test takers' personalities and abilities. RAC discontinued use of the management test containing the MMPI in California and agreed to pay a settlement of $2 million, to be divided among 1,200 test takers in California (Sullivan & Arnold, 2000).

Egas Moniz (1874–1955)

António Caetano de Abreu Freire Egas Moniz was a Portuguese neurologist and dean of Medicine at the University of Lisbon. Moniz was awarded the 1949 Nobel Prize in Physiology or Medicine for his development of the prefrontal leucotomy, a type of psychosurgery. He was nominated for Nobel prizes—in 1928 and 1933—for his development of cerebral angiography, a method of making blood vessels in the brain visible on X-rays. He was also a distinguished politician. He was elected to the Portuguese parliament in 1900 and was ambassador to Spain during World War I. As minister for external affairs, he represented Portugal at the Versailles Peace Conference in 1918 (Tierney, 2000). He was a prolific and diverse author, writing on such subjects as sexology (which shocked his religious countrymen), the history of playing cards (1942), clinical neurology, and n[illegible]logical war injur[illegible] wrote

several biographies. By 1934, he had written 112 articles and two books about angiography (Tierney, 2000).

Moniz was born to parents Fernando de Pina Rezende Abreu and Maria do Rosario de Almeida e Sousa in the northern Portuguese town of Avança, at Casa do Marinheiro, an estate that had belonged to his aristocratic family for 500 years. He was baptized António Caetano de Abreu Freire. His godfather, an admirer of the 12th-century Portuguese hero Egas Moniz, added "Egas Moniz" to his name. Moniz attended Coimbra University, where he studied medicine and developed an interest in politics. He supported a republican form of government, which differed from his family's long-standing support of the monarchy; he was arrested several times for his political activities. After graduating from medical school in 1899, he lectured at Coimbra for 12 years before being appointed professor of neurology at the University of Lisbon in 1911. In 1902, he married Elvira de Macedo Dias. He retired from his professorship at the University of Lisbon in 1944. He died in 1955, at the age of 81.

Moniz's interest in psychosurgery was sparked by a presentation by American physiologists John F. Fulton and Carlyle Jacobsen at the 1935 Second World Congress of Neurology. In the 1930s, Fulton and Jacobsen found that creating lesions (wounds) in part of the frontal lobes of chimpanzees produced behavioral changes. After the surgery, a chimp who was previously agitated became docile. Moniz, an attendee at the 1935 congress, proposed using frontal cortex surgery in human psychiatric patients: "if frontal lobe removal prevents the development of experimental neuroses in animals and eliminates frustrational behavior, why would it not be feasible to relieve anxiety states in man by surgical means?" (Tierney, 2000, p. 27). Moniz and Portuguese neurosurgeon Almeida Lima began testing the prefrontal leucotomy on patients with psychoses. Because Moniz suffered from severe gout, he never performed leucotomies himself. The procedure involved severing nerve fibers in the frontal lobes as a treatment for depression, anxiety, and agitation associated with obsessive-compulsive disorder and schizophrenia. Moniz coined the term *psychosurgery.* Initial response to the leucotomy was positive; patients seemed to have reduced anxiety and agitation, and language and memory remained intact. However, patients also exhibited personality changes, lack of motivation, and flattened affect (expressing little or no emotion). Some patients were returned to asylums and never seen again (Mashour, Walker, & Martuza, 2005).

In 1936 (after Moniz's initial reports), American neurologist Walter Freeman and American neurosurgeon James Watts started performing the treatment in the United States, which they modified and renamed *prefrontal lobotomy.* The lobotomy, which was much more destructive than the leucotomy, was practiced in the United States until the 1970s.

See also prefrontal cortex, prefrontal lobotomy, psychosurgery.

Further Reading:

Museu Egas Moniz Web site (in Portuguese): http://museuegasmoniz.cm-estarreja.pt/

References:

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Monoamine Oxidase Inhibitor

The first antidepressants were discovered inadvertently in the 1950s when a tuberculosis medication, iproniazid, was found to improve patients' moods (Preston, O'Neal, & Talaga, 2008). Iproniazid (Marsilid, Iprozid, Rivivol) and other monoamine oxidase inhibitors (MAOIs) block MAO, a substance that breaks down the norepinephrine, serotonin, and dopamine stored at the ends of neurons. This makes more of these neurotransmitters (chemical messengers) available for neurotransmission (communication between neurons; Preston et al., 2008).This discovery led to the development of the first class of antidepressant medication, the MAOIs. MAOIs include iproniazid, isocarboxazid (Marplan), pargyline (Eutonyl), phenelzine (Nardil), selegiline (Deprenyl, Emsam), and tranylcypromine (Parnate). In addition to the MAOIs, other types of antidepressants include tricyclics, selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), norepinephrine reuptake inhibitors, and atypical antidepressants. One type of atypical antidepressant is the reversible inhibitor of monoamine oxidase A (RIMA), which is a variant of the MAOI.

MAOI antidepressants are used to treat clinical depression and anxiety (e.g., social anxiety, generalized anxiety, panic disorder, posttraumatic stress disorder, and bulimia). Some MAOIs (e.g., Selegiline, an MAO-B inhibitor) are used in the treatment of Parkinson's disease. MAOIs are particularly useful to treat refractory (treatment-resistant) depression. Owing to potentially fatal severe hypertensive (high blood pressure) reactions, MAOIs are generally used only after other antidepressants have failed. Severe hypertensive reactions can be caused by taking MAOIs with decongestants or other antidepressants or by eating foods high in tyramine (e.g., salami, chicken liver, some sausages, some types of fish, bologna, beef bouillon, sauerkraut, some types of beer or wine). Other side effects of MAOIs may include sedation, agitation, confusion, insomnia, sudden drop in blood pressure, and edema (Preston et al., 2008).

Combining MAOIs with other antidepressants or drugs, such as opioids, stimulants (e.g., amphetamines, cocaine), psychedelics (e.g., MDMA or Ecstasy), or herbs (e.g., St. John's wort), can cause serotonin syndrome—a potentially lethal condition resulting from toxic levels of serotonin in the central nervous system. Symptoms of serotonin syndrome may include rapid heart rate, sweating, shivering, dilated pupils, tremor or twitching, muscular rigidity, elevated temperature, confusion, agitation, delirium, hallucinations, coma, or death.

Sudden discontinuation of MAOIs can result in withdrawal symptoms, which may include dizziness, nausea, sweating, insomnia, tremor, or confusion. A schedule for tapering off antidepressants should be discussed with a doctor. Risk of taking MAOIs while pregnant (including harm to the mother or to the fetus) cannot be ruled out (Preston et al., 2008). To avoid potentially harmful side effects and drug interactions, health care consumers should be sure that their doctors and pharmacist are aware of *all* medications they are taking, including over-the-counter medications, herbs and natural remedies, and dietary supplements.

See also antidepressant, atypical antidepressants, depression, neurotransmitter, Prozac (fluoxetine), selective serotonin reuptake inhibitor, St. John's wort, tricyclic antidepressant.

Further Readings:

American Psychiatric Association—Healthy Minds Web site: http://www.healthyminds.org/
Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/
National Alliance on Mental Illness Web site: http://www.nami.org/

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Mood

A mood is a type of emotional experience. It is relatively long-lasting, persisting for up to several weeks or months, and there is no particular object toward which the feeling is directed; a mood is free floating. A good way to understand mood is to contrast it with the related concept of *emotion* (also called an *emotion episode*). An emotion episode is an immediate, temporary reaction to an event or experience (or an imagined event or experience). When a person experiences an emotion, she feels something toward a particular object, for example, she may be mad at a particular person or circumstance. When a person is experiencing a mood, she probably does not know why she feels that way, and the feeling is not directed toward anyone or anything in particular—she is just mad.

Emotions are temporary experiences. What exactly is meant by temporary is not rigidly determined. However, when research participants are asked to report on their emotional reactions to events, they typically state that the emotional episode lasts between several minutes and several hours. Moods tend to last for minutes, hours, days, or weeks, as a background to emotional experience. It is often unclear when exactly the mood started or ended.

For several decades, researchers have been studying the effects of moods on other experiences. For instance, mood can affect perception. In studies conducted by Niedenthal and Setterlund (1994), it was found that people pay more attention to stimuli or events that are consistent with their already-existing mood. In their studies, they induced mood by playing different types of classical music to participants. One group heard *happy* classical music such as Vivaldi's Concerto in C Major. The second group listened to *sad* music such as *Adagietto* by Mozart. All participants were asked to do a task on the computer, which was to respond to strings of letters. Some strings of letters were words and some were not words (simply strings of letters that were pronounceable in English). There were five different types of words: happy, positive (but not happy), sad, negative (but not sad), and neutral. Participants were presented with these different words or nonwords one at a time. The task was to indicate whether the stimulus was a word or nonword. Reaction time was measured for each response. Consistent with their hypothesis, people responded more quickly to words that were congruent with the quality of classical music to which they were listening (which presumably affected mood). Specifically, people who listened to happy music responded more quickly to happy words than to all other words, and people who listened to sad music responded more quickly to sad words than to all other words. Niedenthal and Setterlund concluded that one's current mood can affect perception or what one attends to. They suggested that this may be one mechanism through which moods tend to persist as we see in the world re-

inforces the way we already feel, and we are relatively unperceiving of stimuli that are inconsistent with our moods.

Mood has been studied in relation to other experiences or behavior, including memory, general cognition, and social behavior. Eich, Kihlstrom, Bower, Forgas, and Niedenthal (2000) review some of the research in the broad area of cognition in their book *Cognition and Emotion.*

See also affect, euthymic mood, music.

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Mood Disorder

Mood disorders are a category of mental disorders described in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), a guide to classification of mental health disorders used primarily in the United States. The predominant feature of mood disorders is a disturbance in mood. Mood disorders are divided into depressive disorders (unipolar depression), bipolar disorders, disorders due to a general medical condition, and substance-induced mood disorders.

The building blocks for diagnosis of mood disorders are *mood episodes*, including major depressive, manic, hypomanic, or mixed episodes. Mood disorders are diagnosed based on the presence (or absence) of mood episodes. *Manic episodes* are characterized by abnormally elevated, expansive, or irritable mood, accompanied by inflated self-esteem or grandiosity, decreased need for sleep, pressured speech, flight of ideas, distractibility, increased involvement in goal-directed activities, or excessive involvement in risky behaviors. Manic episodes may also be accompanied by psychotic symptoms (e.g., hallucinations or delusions). Symptoms of *hypomanic episodes* are similar to those of manic episodes but are not accompanied by psychotic symptoms. Hypomanic episodes are less severe than manic episodes, which may cause marked impairment in social or occupational functioning and may require hospitalization. *Mixed episodes* include symptoms of both manic and depressive episodes occurring nearly every day for at least a week (American Psychiatric Association, 2000).

Depressive disorders include major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified (NOS). Depressive episodes are characterized by depressed mood or lack of interest or pleasure in most activities (anhedonia). Depressive episodes may also include changes in sleep, weight or appetite, decreased energy, feelings of worthlessness or guilt, difficulty concentrating or making decisions, or recurrent thoughts of death or suicide. Depression may be seasonal (e.g., seasonal affective disorder) or associated with hormonal changes (e.g., postpartum depression). In depressive disorders, there is no history of having had manic, hypomanic, or mixed episodes (a distinguishing feature of bipolar disorders). Depression may be accompanied by psychotic features, such as hallucinations or delusions.

Bipolar disorders include bipolar I, bipolar II, cyclothymic disorder, and bipolar disorder NOS. Bipolar disorders involve the presence of manic, hypomanic, or mixed episodes, usually alternating with depressive episodes.

In mood disorder due to a general medical condition, mood episodes are determined to be a direct physiological consequence of a medical condition (e.g., diabetes, thyroid disease). In substance-induced mood disorder, the mood disturbance is a direct physiological consequence of a medication, drug of abuse, or exposure to a toxin.

See also anhedonia, bipolar disorder, depression, dysthymia, endogenous depression, major depressive disorder, postpartum depression, seasonal affective disorder.

Reference:

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

- Approximately 20.9 million American adults, or about 9.5 percent of the U.S. population aged 18 and older in a given year, have a mood disorder.
- The median age of onset for mood disorders is 30 years.
- Depressive disorders often co-occur with anxiety disorders and substance abuse.

Source: http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america.shtml

Mood Ring

Mood rings, introduced in the early 1970s, are rings containing liquid crystals that change color. The color of the ring was supposed to indicate the emotional state, or mood, of the ring's wearer. Mood rings cannot actually reflect emotions; they change color depending on the wearer's peripheral skin temperature. Warm skin temperatures produce brighter colors, presumably indicating a happy mood, while cold temperatures produce darker colors, presumably indicating a darker mood.

Mood rings are calibrated to have a blue or green color at the average person's resting peripheral skin temperature (about 82 degrees Fahrenheit or 28 degrees Celsius). Peripheral skin temperature tends to increase with passion or happiness, causing the ring color to move toward blue or violet. Stress may result in decreased skin temperature, twisting the liquid crystals in the other direction, resulting in a yellower color. According to information provided with the mood ring, colors were said to indicate the following moods: violet blue (happy, romantic), blue (calm, relaxed), green (average, not much going on), yellow/amber (tense, excited), brown/gray (anxious, nervous), black (depressed, down). In cold weather, or if the mood ring is damaged, the color will turn black (Berg, 2002).

While the mood ring's popularity died out in the middle to late 1970s, offshoots of it appear from time to time. Currently available are the Shoji mood lamp, said to assess the mood of an entire room by gathering data about temperature, humidity, and people's movement in the room. The mood phone changes color and brightness based on analysis of voice patterns and tones. The mood phone was designed to im-

prove social interactions, especially for people with autistic spectrum disorders such as Asperger's syndrome. Mood artwork, created by researchers at the Boston University and the University of Bath, is displayed on a video screen that alters the artwork's color and brush strokes based on changes in a viewer's facial expressions (Stanton, 2007).

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Mood Stabilizer

Mood stabilizers are medications used in the treatment of bipolar disorder (formerly called *manic depressive disorder*). The term *mood stabilizer* (which is not officially recognized by the U.S. Food and Drug Administration, or FDA) is used interchangeably with the terms *bipolar medications* and *antimanic.* Bipolar disorder is a condition characterized by alternating episodes of mania (e.g., elevated mood, high energy, inflated self-esteem, grandiosity, risk-taking behavior), depression, and periods of normal mood and energy (also known as *euthymia*). Depending on the type of bipolar disorder, an individual may experience a combination of episode types: manic, depressive, or mixed (features of both mania and depression in the same episode). Some medications are more effective for treating manic symptoms, others are used primarily to treat depressive symptoms, and some medications are effective on multiple symptoms. Since individuals respond differently to medications, treatment regimens must be individually tailored and closely monitored for effectiveness, treatment of target symptoms, and any side effects.

Lithium, reported by Australian psychiatrist John Cade in 1949 and approved by the FDA in 1970, was the first effective treatment for bipolar disorder (Patterson, 2006). The anticonvulsants carbamazepine and valproic acid have also been used effectively as mood stabilizers for many years. Current treatment of bipolar disorder may include multiple mood stabilizers, antidepressants, antipsychotics, and benzodiazepines (Patterson, O'Neal, & Talaga, 2008). While all these medications are used to treat the symptoms of bipolar disorder, *mood stabilizers* typically refer to lithium, anticonvulsants, and any medications that help prevent switching into a manic or depressive episode. *Antimanic* more often refers to those medications that treat symptoms or prevent occurrences of mania.

Lithium is a relatively safe treatment and is effective in the treatment of acute mania and prevention of manic and depressive episodes in 60 to 80 percent of cases (Preston et al., 2008). Lithium has a narrow therapeutic window—the difference between a therapeutically effective dose and a toxic one is very small—and therefore frequent monitoring of blood level lithium concentrations is necessary (Preston et al., 2008). After initiating lithium treatment, it may take from five days to weeks

before experiencing therapeutic benefits. Side effects of lithium may include gastrointestinal effects (nausea, vomiting, diarrhea), headache, lethargy, muscle weakness, hand tremors, rash, acne, and weight gain. Some side effects, such as confusion, stupor, slurred speech, or worsening tremor or gastrointestinal symptoms, may be signs of lithium toxicity, which can cause seizures, coma, or death. Lithium can cause some hormonal changes, so periodic monitoring of thyroid function is recommended. Since lithium depends on the kidneys for excretion, it is important for individuals taking lithium to stay well hydrated (Preston et al., 2008). Lithium should not be taken during pregnancy. The mechanism of action for lithium is not clearly understood. It may work through its ability to stabilize cell membranes; its effects on the neurotransmitters (chemical messengers) dopamine, norepinephrine, and serotonin; or its neuroprotective properties (protecting against destructive consequences of certain biochemical processes in the brain; Preston et al., 2008).

The anticonvulsants carbamazepine (Tegretol Equetro), valproic acid (divalproex, Depakote), and lamotrigine (Lamictal) are all effective mood stabilizers. Other anticonvulsants used as mood stabilizers include gabapentin (Neurontin), topiramate (Topamax), tiagabine (Gabatril), oxcarbazepine (Trileptal), and pregabilin (Lyrica). The mechanisms of action for the anticonvulsants have not been conclusively identified. Some anticonvulsants have demonstrated neuroprotective properties. Anticonvulsants are believed to affect the activity of certain neurotransmitters (chemical messengers), increasing the activity of gamma-aminobutyric acid (GABA) or inhibiting the activity of glutamate (Preston et al., 2008). Side effects vary by anticonvulsant but may include sedation, dizziness, drowsiness, blurred vision, incoordination, gastrointestinal symptoms (nausea, vomiting, diarrhea, abdominal pain), rash, or hives. Blood levels should be monitored frequently to identify potential toxicity (Preston et al., 2008). Some anticonvulsants (e.g., Topamax) can cause confusion or memory loss (Dulcan, 2007). Use of some anticonvulsants (e.g., Depakote) during pregnancy has been associated with neural tube defects; risk cannot be ruled out for other effects (e.g., Tegretol; Preston et al., 2008)

Atypical antipsychotics used (alone or in conjunction with other medications) to treat mania, depression, and for relapse prevention include olanzapine (Zyprexa), risperidone (Risperdal), ziprasidone (Geodon), aripiprazole (Abilify), quetiapine (Seroquel), and clozapine (Clozaril). Treatment may also include benzodiazepines (e.g., Ativan, Klonopin) or antidepressants (Patterson, 2006; Preston et al., 2008). There are concerns that antidepressants (both selective serotonin reuptake inhibitors and other antidepressants) may trigger a switch to a manic episode, so antidepressants are generally used together with a mood stabilizer (Patterson, 2006).

Omega-3 fatty acids, found in seafood, flax seeds, and eggs, have been studied for the treatment of bipolar disorder. Some studies support the effectiveness of omega-3 fatty acids in treating the depressive symptoms of bipolar disorder. Studies demonstrated no effect of omega-3 fatty acids on manic symptoms. Research conclusions should be interpreted with caution due to small sample sizes, concerns about study design, and conflicting results (Peet & Stokes, 2005; Ross, Seguin, & Sieswerda, 2007). St. John's wort (*Hypericum perforatum*) has been primarily studied for its effects on depression. Research does not support the effectiveness of St. John's wort as a treatment for bipolar disorder, and researchers have issued warnings about harmful interactions between St. John's wort and bipolar medications (U.S. Food and Drug

Administration, 2000) as well as concerns about St. John's wort triggering manic episodes (Nierenberg, Burt, Matthews, & Weiss, 1999).

See also antidepressant, antimanic, antipsychotic, benzodiazepine, bipolar disorder, complementary and alternative medicine, lithium therapy.

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Mood Swings

A mood swing is a rapid (or extreme) change of mood. Mood swings may be a feature of emotional lability, which involves marked, intense emotional fluctuations. Mood swings are associated with bipolar disorder, where individuals alternate between manic (or hypomanic) and depressive states. Mood swings may also be associated with traumatic brain injury (Brain Injury Resource Foundation, n.d.), Alzheimer's disease, stroke, autistic spectrum disorders, and attention-deficit hyperactivity disorder. Mood swings can accompany hormonal changes such as those occurring during puberty, pregnancy, postpartum (after childbirth), and menopause. Mood swings can be a feature of premenstrual syndrome (PMS). Some drugs and medications (e.g., steroid use, withdrawal from stimulants) can cause mood swings. Generally, after the effects of the drugs wear off (or after withdrawal), moods—and the ability to regulate them—will return to normal. In conditions that have accompanying mood swings (such as bipolar disorder), mood-stabilizing medications may help even out moods. These include antimanic or anticonvulsant medications (e.g., lithium or valproic acid) and some antidepressants.

See also antimanic, autistic spectrum disorders, bipolar disorder, hormones, lability (emotional), lithium therapy, menopause, mood stabilizer, postpartum depression, traumatic brain injury.

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Motivation

Motivation is the drive, energy, or activation to engage in goal-oriented behaviors. Motivation may be external (extrinsic) or internal (intrinsic). *Intrinsic* motivation comes from the rewards inherent to a task or activity, for example, the pleasure, interest, or enjoyment of playing a musical instrument, painting a picture, or learning for its own sake. *Extrinsic* motivation comes from an external source. External motivation may be positive, such as reaping a reward (earning money, getting a good grade, making the football team), or negative (e.g., avoiding punishment, fear of breaking the rules). Competition is generally an extrinsic motivator; the drive to compete is motivated by a desire to win or to beat others.

In 1981, psychologist Susan Harter developed a motivational scale, with extrinsic and intrinsic motivation on opposite poles of a single dimension. Children were asked whether they read books for intrinsic (e.g., because they enjoyed reading) or extrinsic (e.g., to please the teacher) reasons. However, there was no way for children to indicate that both types of motivations might be valid. More recent research seems to indicate that extrinsic and intrinsic motivation may coexist (they are not mutually exclusive); motivation varies depending on individual factors (e.g., age), activity or task, and other factors. Numerous studies have examined the relationship between motivation (primarily intrinsic or extrinsic) and academic achievement. It has been found that higher levels of intrinsic motivation are linked to greater academic achievement. Developmentally, intrinsic motivation appears to decrease significantly (and extrinsic motivation increase) as children progress through the elementary and middle school years. There is speculation that this is related to the heavy use of rewards in American classrooms as well as increased emphasis on grades and test scores, especially as students get older (Lepper, Iyengar, & Henderlong Corpus, 2005).

Emotions motivate behavior, and different emotions have unique functions related to motivation. For example, interest provokes curiosity, wonder, and the urge to explore or discover. Interest is an intrinsic motivator that helps focus attention and provide the energy to promote interaction and engagement with the environment. Happiness follows from achievement of a goal; joy serves as a reward that promotes returning to a reinforcing activity. Sadness (e.g., grief about the death of a loved one) can motivate renewal and strengthening of social bonds with friends and loved ones. Anger can mobilize and sustain energy, with a corresponding increase in motor activity at high levels. Shame acts as a force for social cohesion and conformity; the anticipation of shame (or desire to avoid shame) may motivate an individual to accept responsibility for the welfare of the family or community. Fear motivates escape from dangerous situations (Izard & Ackerman, 2000).

The ability to plan and follow through (related to executive functioning) is not always associated with motivation. Difficulties with organization or planning, together with a high degree of motivation, can lead to frustration and negatively affect one's sense of self-esteem. In bipolar disorder, mania (or hypomania) is characterized by expansive, elevated, or irritable mood, inflated sense of self (feelings of superiority or importance), decreased need for sleep, pressured speech, flight of ideas, increased involvement in goal-directed activities, excessive pleasure seeking, and/or risk-taking behaviors. Mania may be associated with increased energy, motivation,

and creativity. However, because of the nature of mania—and the cognitive features of bipolar disorder—this can lead to many ideas, plans, and unfinished projects.

Amotivation means lack of motivation. Amotivation may be a feature of depression. It may also be associated with the use of certain drugs (e.g., marijuana).

See also bipolar disorder, curiosity, depressant drugs, desire, evolutionary psychology (human sociobiology), learned helplessness, libido, locus of control, Abraham Maslow.

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Multimodal Therapy: BASIC I.D.

Arnold Lazarus developed the multimodal BASIC I.D. model in 1970 as a cognitive-behavioral therapy. BASIC I.D. is an acronym of several dimensions (or modes) of a person's interactions with and perceptions of the world: B (behavior), A (affect), S (sensory), I (imagery), C (cognition), I. (interpersonal), and D. (diet/drugs/biology).

The multimodal model can be used by a psychotherapist or counselor to work with clients on issues such as anxiety, depression, other mood problems, or various psychological disorders. It can also be used as a self-analysis tool as part of a stress reduction program to gain insight into one's style of thinking and interacting with the world. Multimodal therapy has been used in private practice, in conjunction with art therapy, and in working with children in school settings. The multimodal process asks the questions about each letter of the BASIC I.D. acronym given in Table 7.

Table 7: Multimodal Therapy: BASIC I.D.

B: behavior	What self-defeating actions or maladaptive *behaviors* are getting in the way of my personal fulfillment or happiness? What should I do differently?
A: affect	What seems to generate negative *affects* (emotional reactions), including anger, anxiety, or depression? To what degrees are these emotions experienced (e.g., rage or irritation, uneasiness vs. panic)? Do certain thoughts, images, or interpersonal conflicts generate these negative emotions? How do I respond (behave) when I feel a certain way?

(*continued*)

S: sensory	What *sensations* do I feel in my body (e.g., pain, muscle tension, butterflies in the stomach)? What thoughts, feelings, and behaviors accompany these sensations?
I: imagery	What kinds of *images* do I tend to experience (e.g., images of failure or success)? How do these images connect with thoughts, feelings, and behaviors? What is my "self-image"?
C: cognition	What are my main *cognitions* (i.e., thoughts, including values, beliefs, attitudes, and opinions)? Are they rational or irrational? Do my thoughts include "I should," "I ought to," or "I must"?
I.: interpersonal	What are my significant *interpersonal* relationships like? What do I expect from and provide to others? Which relationships are satisfactory and which cause problems?
D.: diet/drugs	Regarding biological health (including *diet* and *drugs*), how is my overall health? How do I manage my health, including exercise and nutrition, sleep, and use of drugs and alcohol?

Source: Yvette Malamud Ozer, based on Lazarus (1984) and Lazarus and Abramovitz (2004).

Let's say that Henry wants to reduce the level of stress in his life. Henry describes a typical situation that recently caused him stress:

> Last night I had three or four beers in a sports bar while watching the big game with my friends. I got home kind of late, and I didn't sleep well, so I didn't hear the alarm go off this morning. When I woke up, I was kind of hung over and I was afraid I'd be late for work, I could just see my boss chewing me out; so I was rushing, and then this guy cut me off on the freeway. Boy was I pissed! I gunned the engine and laid on the horn. I was passing him at 95 miles per hour when I saw the flashing lights in my rearview mirror. I felt my heart pounding as I pulled the car over and thought about what I'd say to the cop, and to my boss. I was really afraid I'd get fired this time.

We can describe various aspects of Henry's situation using the BASIC I.D. model as follows:

- B (behavior): Stay out late drinking; sleep through alarm; drive recklessly
- A (affect): Anger; worry, anxiety
- S (sensory): Hung over; heart pounding
- I (imagery): I see my boss chewing me out; I imagine what I'll say to the cop, to my boss
- C (cognition): I'll be late; I'll get fired
- I. (interpersonal): I like to spend time with my friends watching sports; I'm upset that I got a speeding ticket; I'm afraid my boss is going to chew me out or fire me; I hate it when other drivers cut me off!
- D. (diet/drugs/biology): Drinking so much alcohol and getting to bed late may have affected how well I sl[illegible] and I didn't ge[illegible]gh sleep, so I woke up grouchy and hung over

After breaking the stressful situation into its BASIC I.D. components, Henry can gain additional insight about the relationships between his different modalities by determining his *firing order*, or the sequence in which he responds to stress (Lazarus refers to this as *tracking*). In Henry's example, D. (diet/drugs/biology) is the biggest factor that sets the stage for all the other elements. If Henry consumes too much alcohol and has too little sleep, then S (sensory) kicks in—in the form of a hangover—closely followed by A (affect, e.g., fear), I (imagery, e.g., seeing the boss chewing him out), and C (cognition, "I'll be late," "I'll get fired"). If Henry does not intervene at this point, then self-defeating behaviors (B) follow on the heels of negative feelings, with resultant interpersonal (I.) consequences. So Henry's firing order in this example is DSAIC.

Lazarus pointed out in his decades-long discussions of multimodal approaches to therapy that we experience the world on many different levels, and we react and cope using many different modalities. Using the BASIC I.D. approach can help someone determine the role that outside stressors and ways of viewing and interacting with the world have on her ability to cope with life. Identifying her firing order can help someone figure out which therapeutic or stress management techniques to focus on most and where she has the most challenges.

Someone whose negative feelings, thoughts, or behaviors are often prompted by physical stress may benefit from yoga, meditation, biofeedback, aerobic exercise, or other body-oriented approaches. If diet or drugs appear early in someone's firing order, he might benefit more from a nutritional approach, smoking cessation, or switching from regular coffee to decaf. Someone whose negative thoughts always precede negative feelings or behaviors may benefit more from a cognitive therapy approach.

See also Arnold A. Lazarus, cognitive therapy and cognitive-behavioral therapy, stress.

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Music

Music is able to influence and evoke emotions. It seems to offer a unique means of communication—rooted in emotion—that can bypass the need for verbal expression. Music conveys certain emotions across cultures. In a study of emotion recognition in music among the Mafa (a culturally isolated people in Cameroon, Africa) and Western (German) listeners, both groups were able to recognize happy, sad, and scared/fearful emotions conveyed by both types of music (Western and Mafa). Neither

group had been previously exposed to music from the other culture (Fritz et al., 2009).

Individuals with autism exhibit social and emotional processing deficits, including difficulty identifying others' emotions (e.g., from facial or vocal expression). A study investigating recognition of emotions (anger, fear, love, triumph, and contemplation) in music compared children with autism, Down syndrome (an intellectual disability), and typically developing children. This study found that understanding emotions conveyed by music was more closely linked to chronological age and verbal ability than to diagnosis (e.g., autism, intellectual disability). Findings suggest that social emotional processing deficits in autism do not extend to recognition of emotions in music (Heaton, Allen, Williams, Cummins, & Happé, 2009).

Emotion recognition and processing in music involves several brain structures, including those involved in emotion, cognition (thinking), motor (movement), speech and language (sounds), and spatial processing. *Amusia* is a condition in which ability to perceive and enjoy music is impaired. Amusia can be caused by brain damage (e.g., stroke, epilepsy, or traumatic brain injury) or abnormal development (congenital amusia). Studies of individuals with amusia have provided insight into the brain structures involved with music perception and processing. A study of stroke patients found that patients with amusia had a higher incidence of damage to the frontal lobe and auditory cortex of the brain. It was also found that patients' music perception abilities returned as they recovered their verbal learning, visuospatial processing, and attention abilities, indicating the close link between musical perception and other cognitive processing abilities (Särkämö et al., 2009). Patients with temporal lobe epilepsy showed decreased ability to distinguish happy and sad music, depending on which side of the brain was damaged. This study showed that brain regions on the right and left side were involved in recognizing different emotions in music (Khalfa et al., 2008). Functional magnetic resonance imaging (fMRI) studies have shown that neural systems in the right hemisphere of the brain are necessary to process the pitch, melody, harmony, and structure of music. A study exposing newborn infants (one to three days old) to music found that the same brain regions were activated in infants as in adults, primarily in the right hemisphere of the brain. When dissonant (unpleasant) music was played, brain systems on the left side (inferior frontal cortex and limbic structures) were activated, as in adults. This study showed that the brain structures used to process music are present at birth (Perani et al., 2008).

The brain's responses to music may depend on the experience and training of the listener. Brain studies with musicians have provided evidence of the brain's ability to form new connections in response to musical activities. Musicians (with years of musical training) show increased development of brain regions (e.g., auditory and motor cortices) over the brains of nonmusicians (Weinberger, 2004).

Music therapy has been used to reduce stress, anxiety, and pain. It has also been used as a treatment for specific disorders, including traumatic brain injury. Imaging studies have shown that many different brain areas are used in music processing and that music processing involves collaboration between the right and left hemispheres of the brain. Therapy involving music encourages communication among different brain regions and hemispheres and may help forge new brain connections. Research shows that music therapy stimulates cognitive functions, improves mood, and re-

duces anxiety, depression, and aggression in some disorders (Guétin, Soua, Voiriot, Picot, & Hérisson, 2009).

See also autistic spectrum disorders, functional magnetic resonance imaging, limbic system, traumatic brain injury.

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Musicophilia videos and links: http://www.musicophilia.com/

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Music as we know it has been around for about 50,000 years. A bone flute made out of the femur bone of a cave bear has been found dating from between 43,000 and 82,000 years ago. For more on the origins of music, see Mithen, S. (2006). *The singing Neanderthals: The origins of music, language, mind, and body.* Cambridge, MA: Harvard University Press.

Source: http://www.greenwych.ca/fl-compl.htm

N

NAADAC (The Association for Addiction Professionals)

The Association for Addiction Professionals (NAADAC) is the world's largest organization of addiction-focused health care professionals. NAADAC was originally founded in 1972 as the National Association of Alcoholism Counselors and Trainers (NAACT). The NAACT was created with the goal of developing a field of professional counselors with professional training and qualifications. In 1982, NAACT professionals collaborated with professionals interested in addictions to other substances and became the National Association of Alcohol and Drug Abuse Counselors. Later the name of the organization was changed to NAADAC, the Association for Addiction Professionals, to recognize the diverse professionals who are members; members include counselors, administrators, social workers, and others.

The services NAADAC offers for addiction professionals include education, reports of research projects and opportunities for involvement in research projects, and opportunities for involvement in advocacy. At the annual convention, numerous talks, symposia, and other programs are presented over several days. Courses on single topics are offered and delivered at several locations in the United States in a given year. For example, courses offered in 2009 were New Innovations in Opioid Treatment: Buprenorphine and New Horizons—Integrating Motivational Styles Strategies and Skills with Pharmacotherapy. NAADAC also publishes a number of books and two regular newsletters. Brochures on specific topics related to drugs and addiction are downloadable on NAADAC's Web site (http://www.naadac.org/).

NAADAC works with academic partners on research projects, including ongoing surveys of members' needs and members' opinions regarding how to sustain and improve their profession. NAADAC is involved in advocacy for prevention, early intervention, and treatment for addictions. NAADAC's Political Action Committee (PAC) advocates with the federal government for improving addiction prevention, treatment, and research. The PAC works to support political candidates who care about addiction issues and improve the chances that they are elected for office.

NAADAC also has a certification program through which individuals may become certified as a National Certified Addiction Counselor, Master Addiction Counselor, or Tobacco Addiction Specialist. Other credentialing and qualification programs are available through the NAADAC.

See also alcohol abuse and alcoholism, substance abuse.

Further Reading:
NAADAC Web site: http://www.naadac.org/

Narcotics Anonymous

Narcotics Anonymous (NA), founded in 1953, was modeled after the first 12-step program, Alcoholics Anonymous (AA, founded 1935). NA is a nonprofit fellowship whose members hold regular 12-step meetings to help each other recover from addiction.

NA meetings started in the Los Angeles, California, area and spread slowly to other North American cities and Australia in the 1970s. Within a few years of the 1983 publication of NA's Basic Text, groups formed in many other countries. Today, NA books and literature are available in 27 languages. In 2005, there were over 21,500 registered NA groups holding over 33,500 weekly meetings in 116 countries. A 2003 voluntary membership survey (about 7,500 responses) revealed that 45 percent of NA members are female, 61 percent are 31 to 50 years of age, 70 percent are Caucasian, 72 percent are employed full-time, and average continuous abstinence/recovery is 7.4 years.

NA utilizes 12 Steps adapted from the 12 Steps of AA. The principles incorporated in NA's 12 Steps include admitting there is a problem, seeking help, thorough self-examination, making amends for harm done, and helping other addicts to recover. NA emphasizes practicing spiritual (not necessarily religious) principles, and each NA member is encouraged to come to his own understanding of a higher power. NA is not affiliated with treatment centers, correctional facilities, or any other organization. NA members are encouraged to practice complete abstinence from all drugs, including alcohol. NA has no official position on outside issues, including the use of prescribed medications. People are not excluded from NA membership because of race, ethnicity, religion, lack of religion, nationality, gender, sexual orientation, or social or economic status.

Because addiction is a family disease, Nar-Anon Family Groups was founded in 1968 to help support family members and friends of addicts. *Codependency* is the term now used to describe the family dynamics that enable the addict to keep using, shield the addict from adverse consequences, and keep the whole family sick.

See also Alcoholics Anonymous, substance abuse, 12-step programs.

Further Readings:
Narcotics Anonymous World Services Web site: http://www.na.org/index.php?ID=home-content-inf
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National Alliance on Mental Illness

The National Alliance on Mental Illness (NAMI) is a nationwide advocacy group representing people affected with mental illness and their families. As a nonprofit grassroots organization, NAMI has affiliates in every American state and in over 1,000 local communities. The history of NAMI goes back to 1979, when six independent support groups for parents of adults with severe and persistent mental illnesses from around the country held the first conference in Madison, Wisconsin. Over the decades,

the interest and the membership of NAMI has extended to incorporate families and friends of people with mental illness as well as mental health care professionals.

The mission statement of NAMI is to improve the quality of life of all persons affected by mental illness; NAMI maintains that recovery, resiliency, and support are necessary for the wellness and quality of life of mentally ill persons. The main activities of NAMI include providing public education about mental illness, peer education and support groups, raising awareness and fighting stigma, and gaining state and federal support. Examples of specific issues that NAMI works on behalf of the mentally ill include insurance parity, affordable housing, increases in research appropriations, improved work incentives and income assistance, and access to medications. NAMI has emphasized the importance of evidence-based treatment practices and assertive community treatment.

NAMI includes a number of well-organized and well-developed programs that each focus on a specific issue or closely related issues. In Our Own Voice (IOOV), a core program of NAMI, was designed to involve consumers in educating the public and other mentally ill persons about serious mental illness. In this program, people with mental illness share their life experiences. Through the presentations, audience members learn the process of recovery and life with a serious mental illness. IOOV helps presenters build self-esteem and learn new coping skills as well. StigmaBusters, another specific program, was formed to fight against inaccurate and hurtful language and portrayals of mental illness in the media. Its mission is to promote understanding and respect for those who live with mental illness. Individuals involved in StigmaBusters produce general brochures that challenge common stereotypes and timely e-mail alerts when potentially harmful stereotypes are presented in the media. NAMI also has a number of specific advocacy groups and action centers. NAMI Advocacy advocates for state and federal and private-sector policies that will increase support for research, decrease discrimination, and foster efficacious mental health services. Action centers such as the Children and Adolescent Action Center and the Multicultural Action Center play central roles in developing and offering vital information to meet specific needs of specific groups of mentally ill persons. NAMI also provides information about mental illness through its Web site.

Further Reading:

National Alliance on Mental Illness Web site: http://www.nami.org/

National Association of School Psychologists

The National Association of School Psychologists (NASP), founded in 1969, is the largest organization of school psychologists in the world, representing more than 21,000 members. NASP describes its goals in the following words:

- serve the mental health and educational needs of all children and youth
- promote prevention and early intervention, problem-solving approaches and collaboration, and research-based strategies and programs
- encourage and provide opportunities for the professional growth of individual members
- inform the public about the services and practices of psychology in schools
- advance the standards of the profession of school psychology

In its brochure "What Is a School Psychologist?" NASP describes the work of school psychologists in the following terms: "School psychologists help children and youth succeed academically, socially, and emotionally. They collaborate with educators, parents, and other professionals to create safe, healthy, and supportive learning environments for all students that strengthen connections between home and school." School psychologists also develop programs to train teachers and parents about effective teaching and learning strategies, behavior management techniques, working with students with disabilities, crisis prevention and management, and drug and alcohol abuse. School psychologists perform evaluations for special education eligibility, assessments of learning style and academic skills, and social-emotional health. Interventions may include individual or group counseling or training in social skills or anger management. School psychologists use research and evaluation skills to identify evidence-based programs to implement in schools, evaluate the effectiveness of interventions, and monitor progress.

School psychologists are highly trained in both psychology and education. Some school psychologists have doctoral degrees (e.g., PhD, PsyD, EdD), and some are master's-level practitioners. Training includes preparation in data-based decision making, consultation and collaboration, effective instruction, child development, student diversity and development, school organization, prevention, intervention, mental health, learning styles, behavior, research, and program evaluation. School psychologists must be certified or licensed by the state in which they work. They may be nationally certified by the National School Psychology Certification Board as Nationally Certified School Psychologists (NCSP). This credentialing system has elevated national standards and credentialing to align with those of other educational and mental health organizations and created greater continuity in practice and credentialing across states. While the majority of school psychologists work in schools, they may also practice in various public and private settings including school-based health centers, clinics, hospitals, private practice, universities, and community or state agencies.

NASP's advocacy efforts focus on specific issues that support children's learning and development and school psychology. As a nonpartisan professional organization, NASP does not support or endorse political candidates. NASP's comprehensive policy platform, titled "Ready to Learn, Empowered to Teach: Excellence in Education for the 21st Century," can be found on its Web site.

NASP publishes several professional journals, including *Communiqué*, *School Psychology Review*, and *School Psychology Forum.* It also publishes books and resources for school psychologists, parents and families, and teachers addressing various mental health and school-related topics.

Further Readings:

National Association of School Psychologists Web site: http://www.nasponline.org/

National Association of School Psychologists. (2008). *Ready to learn, empowered to teach: Excellence in education for the 21st century.* Retrieved from http://www.nasponline.org/advocacy/Ready_to_learn_Breaking_Ranks.pdf

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National Coalition for the Homeless

The National Coalition for the Homeless (NCH) is a [illegible] organization committed to ending homelessness. Its memb[illegible] m[illegible] who are now experiencing o[illegible]

who have formerly experienced homelessness, activists, advocates, and service providers. These individuals share NCH's mission to make a difference in people's attitudes and to create a social system to prevent homelessness. NCH helps those who are currently experiencing or those who are at risk for being homeless. Public education, advocacy, and grassroots organizing are the main activities of NCH. NCH members contribute to material assistance by providing needed items and services such as clothing and job opportunities.

NCH was established in 1982 by Robert Hayes, who filed a lawsuit for a man experiencing homelessness in New York City in 1981. The lawsuit resulted in a victory for people experiencing homelessness; they won the right to shelter in New York City. In 1984, NCH was incorporated and became a nonprofit organization. NCH is primarily funded by support from individuals, foundations, and member organizations. As a community-based coalition, NCH has collaborated with other local and statewide homeless coalitions. There are NCH member organizations in Chicago, San Francisco, Seattle, and Houston and statewide coalitions in Massachusetts and Colorado.

Volunteers play an important role in activities such as working at a shelter, offering professional skills in job training, and inviting others to join the network. Volunteering helps foster people's understanding of homelessness and meets the immediate needs of those who are facing homelessness. The NCH board consists of 32 members, including service providers, academics, and organizers from all major geographic regions in the United States. Some of those members are formerly homeless.

NCH has worked with the federal government to create a systematic change needed to prevent homelessness. The Bring America Home Act (BAHA), initially proposed in 2004 by NCH, underwent revisions. NCH is preparing the bill for re-introduction in the 111th Congress, in an attempt to end mass homelessness in the United States. The purpose of BAHA is to end homelessness by providing for housing, health care, and income security (such as minimum income provisions) for all citizens. A number of specific civil rights provisions are also included such as adding homeless persons as a protected class of people for hate crime reporting and removing a homeless person's impediments to receiving identification. The passage and implementation of this act would greatly improve the living conditions of many homeless persons.

In addition, NCH has been engaged in studies of homelessness. According to NCH, a lack of affordable rental housing and an increase in poverty are the main cause of growing homelessness over the past 20 to 25 years. Low employment opportunities and a decline in the availability of public assistance contribute to rising poverty, while the current housing crisis is aggravated by limited housing assistance programs. Other factors contributing to homelessness include lack of affordable health care, domestic violence, mental illness, and addiction disorders.

Further Reading:

National Coalition for the Homeless Web site: http://www.nationalhomeless.org/

National Eating Disorders Association

The National Eating Disorders Association (NEDA) is the largest nonprofit organization in the United States devoted to providing support and resources to those affected by eating disorders, including individuals, loved ones, and care providers, and to educating concerned individuals and the general public about eating disorders. NEDA was formed in 2001 with the m[illegible] of [illegible]st prevention

and advocacy groups for eating disorders in the world: Eating Disorders Awareness and Prevention and the American Anorexia Bulimia Association.

NEDA's goals include improving access to appropriate treatment for eating disorders, providing education about eating disorders, supporting research on eating disorders, and ultimately, preventing eating disorders. NEDA works toward its goals through the efforts of its own employees, through partnerships with other organizations, and with the help of volunteers.

NEDA sponsors the States for Treatment Advocacy and Research (STAR) program. Through STAR, NEDA advocates collaborate with state legislators to improve access to treatments and to support efforts that intervene early and prevent eating disorders. NEDA educates the public, affected individuals, and treatment providers about eating disorders in a variety of ways. NEDA's annual conference allows families and treatment providers to come together to build networks and share stories. Other annual events, a walk and an awareness week, primarily increase public awareness. NEDA publishes educational materials, including the *Healthy Body Image* book by Kathy J. Kater and a program called "Go Girls!" The goals of the program, designed for high school students, are to improve individual body image and to encourage young women and men to advocate for appropriate body image presentations in the media. As part of the program, participants view advertisements with a critical eye, learning to identify those advertisements that are promoting unhealthy body image. Participants are taught to write letters to companies and to legislators, expressing their thoughts and feelings about proper presentation of body image in the media.

NEDA supports research through cosponsoring young investigator grants and in other ways. The NEDA toll-free help line provides information referrals. Many other resources are available to people with eating disorders and those who care about them.

Further Reading:

National Eating Disorders Association Web site: http://www.nationaleatingdisorders.org/

National Institute of Mental Health

The National Institute of Mental Health (NIMH) is the primary institute in the United States to specialize in research on mental illness. NIMH is one of the 27 component organizations of the National Institutes of Health (NIH), a division of the U.S. Department of Health and Human Services. NIMH conducts research at a central campus in Bethesda, Maryland, while also funding research throughout the United States. NIMH aims to improve the lives of mentally ill people through increasing understanding and improving the diagnosis, prevention, and treatment of mental illness through basic and clinical research on mind, brain, and behavior. NIMH has initiated studies of genetics, neuroscience, and clinical trials of psychiatric medication.

The history of NIMH goes back to 1946, with the enforcement of the National Mental Health Act (NMHA). The objective of the NMHA was to support the research, prevention, and treatment of psychiatric illness. The NMHA led to the establishment of a National Advisory Mental Health Council and a National Institute of Mental Health. NIMH was formally established on April 15, 1949. The primary activities of NIMH include supporting research in the United States and throughout the world; collecting, analyzing, and disseminating information on mental illnesses;

supporting the training of scientists to conduct mental health research; and communicating with researchers, patients, the media, and mental health professionals about mental illnesses.

NIMH divisions and programs are designed to provide support for research programs in each area of mental illness. NIMH funds research both by scientists across the country and through NIMH's internal program. In 2009, more than 2,000 research grants and contracts at universities and other institutions across the country and overseas were supported by NIMH through its extramural program. Approximately 500 scientists work in the NIMH intramural research program, ranging from molecular biologists working in laboratories to clinical researchers working with patients at the NIH Clinical Center. Intramural scientists are accorded unique flexibility in rapidly following up research leads and unexpected opportunities. Supplemental government funds further support NIMH such as funding from the American Recovery and Reinvestment Act of 2009 (the Recovery Act).

The American Psychological Association and other organizations have criticized the NIMH for deemphasizing research from behavioral and social sciences perspectives relative to research on the brain and genetics. According to their arguments, solely focusing on brain and genetics does little if anything to help us understand the cognitive, affective, motivational, and social processes lying behind the mental illnesses (Breckler, 2008).

Further Reading:

National Institute of Mental Health Web site: http://www.nimh.nih.gov/

Reference:

Breckler, S. (2008). The strategic plan of NIMH. *Psychological Science Agenda, 22*(1). Retrieved from http://www.apa.org/science/about/psa/2008/01/ed-column.aspx

National Institute of Neurological Disorders and Stroke

The National Institute of Neurological Disorders and Stroke (NINDS) is the leading U.S. institute supporting and conducting research on neurological disorders and stroke. Its mission is to reduce the burden of neurological disease. NINDS promotes the training of researchers in the basic and clinical neurosciences for better understanding, diagnosis, treatment, and prevention of neurological disorders. NINDS is a branch of the U.S. National Institutes of Health, an agency of the U.S. Department of Health and Human Services accountable for biomedical and health-related research.

NINDS was initially created by the U.S. Congress in 1950. Since its establishment, NINDS has retained a leading position in the world of neuroscience. Research conducted by scientists in NINDS laboratories and clinics covers the important areas of neuroscience and neurological disorders, including the healthy and diseased brain, spinal cord, and peripheral nerves, and disorders afflicting the nervous system such as Parkinson's disease, Alzheimer's disease, multiple sclerosis, stroke, epilepsy, and autism. Basic research promotes understanding of the structures and activities of the cells in the nervous system, brain and nervous system development, genetics of the brain, cognition and behavior, neurodegeneration, brain plasticity and repair, neural signaling, and learning and memory. The external program of NINDS supports research project grants and contracts for universities, medical schools, and hospitals, while its institutional training grants and individual fellowships support scientists in

training. Extramural scientists in public and private institutions conduct the majority of NINDS-funded research.

NINDS has collaborated with other NIH institutes, federal agencies, and organizations to support neuroscientific research. NINDS is known for its contribution to the development of treatments for formerly intractable problems such as spinal cord injury, acute stroke, multiple sclerosis, and Parkinson's disease. The knowledge gained from NINDS research has helped diagnose disease. NINDS has had some success in building the next generation of neuroscientists through funding research training. Its new strategic plan focuses on combining its vision for the future with a practical approach to help NINDS achieve an ideal balance among basic, clinical, translational (relatively easily applied), and disease-related research in neuroscience.

See also autistic spectrum disorders, Parkinson's disease, right hemisphere syndrome.

Further Reading:

National Institute of Neurological Disorders and Stroke Web site: http://www.ninds.nih.gov/

National Institute on Alcohol Abuse and Alcoholism

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) is part of the National Institutes of Health (NIH), an agency of the U.S. Department of Health and Human Services responsible for biomedical and behavioral research on health-related issues. With an aim to reduce severe problems associated with alcohol use nationwide, NIAAA takes a leading role in conducting and supporting research on the causes, consequences, treatment, and prevention of alcoholism and alcohol-related problems. Its research encompasses a range of areas, including genetics, neuroscience, epidemiology, and the health risks and benefits of alcohol consumption. For example, NIAAA has been involved in research on medication development for alcohol-use disorders, genetic studies of vulnerability to alcohol and markers of alcohol-induced organ damage and organ protection, and behavioral risk factors for alcoholism.

Alcohol use disorders include alcohol abuse and alcohol dependence. NIAAA describes *alcohol dependence* (often referred to as alcoholism) as characterized by craving (a strong need or urge to drink alcohol), a loss of control over drinking, physical dependence (withdrawal symptoms such as nausea, sweating, shakiness, and anxiety after stopping drinking), and tolerance (need to drink increased amounts of alcohol over time to achieve the same effects). *Alcohol abuse* is a pattern of drinking with significant and recurring adverse consequences related to drinking alcohol. A person may drink too much and too often. Some of the problems linked to alcohol abuse include not being able to meet work, school, or family responsibilities; drunk-driving arrests and car crashes; and alcohol-related medical conditions (National Institute on Alcohol Abuse and Alcoholism, 2007). For clinical and research purposes, NIAAA follows formal diagnostic criteria for alcohol use disorders included in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). The *DSM-IV-TR* is a diagnostic classification system for mental health disorders used mostly in the United States.

The National Advisory Council (NAC) on Alcohol Abuse and Alcoholism plays an important role in NIAAA. The [illegible] makes suggestions to the secretary and director of the NIH and the director of NIAAA regarding [illegible]m and policy matters in

the field of alcohol abuse and alcoholism. The council also gives advice about research conducted at NIAAA, reviews applications for grants and cooperative agreements for research and research training, and recommends applications for projects that show promise of making valuable contributions to human knowledge.

NIAAA collaborates with other institutions at international, national, state, and local levels. As a means of disseminating scientific findings and information on alcohol-related issues, NIAAA publishes a number of journals and newsletters aimed at different audiences. Publications for researchers and health professionals include epidemiological data, clinicians' resources such as information about how to assess alcohol abuse and dependence and how alcohol use affects relationships, and teacher resources. The findings through research sponsored by NIAAA have contributed to health care providers' increased understanding of normal and abnormal biological functions and behavior regarding alcohol use, which in turn has improved the diagnosis, prevention, and treatment of alcohol-related problems. NIAAA has also helped to deepen and broaden the understanding of alcohol use and alcohol use disorders in the general public. For the public, NIAAA publishes pamphlets, brochures, fact sheets, posters, and publications in Spanish and provides public service announcements.

See also alcohol abuse and alcoholism.

Further Readings:

National Institute on Alcohol Abuse and Alcoholism Web site: http://www.niaaa.nih.gov/

Rethinking drinking: Alcohol and your health (interactive Web site): http://rethinkingdrinking.niaaa.nih.gov/

References:

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

National Institute on Alcohol Abuse and Alcoholism. (2007). *FAQ for the general public*. Retrieved from http://www.niaaa.nih.gov/FAQs/General-English/

National Institute on Drug Abuse

The National Institute on Drug Abuse (NIDA), part of the National Institutes of Health (NIH), specializes in research on drug abuse and addiction. Founded in 1974, NIDA has addressed its mission to lead the nation in scientific research on drug abuse and addiction and to rapidly and effectively distribute the resulting knowledge. NIDA supports over 85 percent of the world's research on drug abuse and addiction (National Institute on Drug Abuse, n.d.).

NIDA's main activities are centered on research programs in basic and clinical sciences, including genetics, functional neuroimaging, social neuroscience, medication and behavioral therapies, prevention, and health services. By encompassing biological, behavioral, and social components of drug addiction, NIDA aims to confront the complex aspects of drug abuse and addiction and to tackle their underlying causes.

In 2009, NIDA identified four major goal areas that encompass their five-year strategic plan: prevention, treatment, HIV/AIDS, and cross-cutting priorities. NIDA aims to work toward prevention of both the initiation of drug use and the escalation to addiction in those who have already started to use. NIDA has supported a great deal of research on treatments for drug addiction, with the goal to improve accessibility to all groups. Additionally, as part of prevention efforts, NIDA has focused on

the issues involving the spread of HIV/AIDS through its connection with other risky behaviors such as needle sharing and unprotected sex. NIDA supports primary prevention research to find the most effective HIV risk-reduction interventions for different populations to diminish the spread of drug abuse–related HIV and minimize the associated health and social consequences of the disease. NIDA goals (called *cross-cutting priorities*) include supporting research on other health conditions that influence drug abuse and addiction, educating diverse groups (e.g., media, legislators, medical groups) about the biology of drug addiction and abuse, attracting new researchers, and supporting international collaboration on research and outreach efforts.

NIDA disseminates information through publications, meetings, and its Web site. Its publications include books, summary research reports, brochures, fact sheets, a serial titled *NIDA Notes* that reports on research studies, and other publications. Regular NIDA meetings, which are open to the public, focus on general NIDA activities or special topics (e.g., specific drugs, particular treatments). NIDA's Web site presents a wealth of information on the organization and on addiction and abuse.

NIDA is headquartered in Rockville, Maryland; its Intramural Research Program (IRP) is located in east Baltimore. NIDA's funding comes through congressional appropriations as well as donations to support its research activities.

See also alcohol abuse and alcoholism, substance abuse.

Further Reading:

National Institute on Drug Abuse Web site: http://www.nida.nih.gov/

Reference:

National Institute on Drug Abuse. (n.d.). *NIDA for teens: Frequently asked questions*. Retrieved from http://teens.drugabuse.gov/drnida/drnida_general1.php

Negative Emotions

Although experiencing negative emotions may be unpleasant, the immediate negative reactions that we have to situations are often functional. For example, when we experience fear at the sound of a rattle at our feet, we jump back to avoid the rattlesnake. When we bring food to our mouths and smell a foul odor, we feel disgust, put down the fork, and push the plate away. According to the leading theories about emotion, the function of negative emotions is to enhance our survival.

The negative emotions and affective states are many and diverse. Examples include fear, anger, disgust, sadness, jealousy, envy, shame, guilt, contempt, anxiety, hate, depression, and hopelessness, to name a few. When perusing this list, it may have occurred to the reader that it is difficult to think of some of these emotional states as functional. For instance, what is the use of feeling hopelessness, or even sadness? Is hate functional? Frijda (1994) addressed this issue in his chapter "Emotions Are Functional, Most of the Time." Frijda compares the functionality of emotions to the functionality of language. The function of language is to communicate, but we often produce sentences that do little to communicate whatever we intended to communicate, and we sometimes even produce sentences that get us in trouble. According to Frijda, it is the same with emotions. In general, emotions serve a function. However, there are many cases in which our experience, expression, or reactions to our emotions can serve us ill rather than serve us well. In fact, the history of the study of

emotion, researchers have focused more on the ways in which negative emotions are dysfunctional than on the ways in which negative emotions are functional. Therefore we have devoted a great deal of research time and effort to disorders of emotions, which include depression; the anxiety disorders such as phobias, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, and posttraumatic stress disorder; and others. This is understandable; people in disciplines such as psychology are interested in relieving human suffering, and fully understanding the causes and nature of suffering seems more urgent than developing a basic intellectual understanding of emotions.

However, some scholars have devoted their work lives to a more general understanding of negative emotions, and basic knowledge has progressed rapidly. Many emotion theories view negative emotions as each being associated with a specific action tendency (e.g., Frijda, 1986; Tooby & Cosmides, 1990). For example, anger is linked with an urge to attack and fear with an urge to escape. The action tendency does not mean that the organism must engage in the particular behavior in any particular way, but a general urge exists. Some cognitive (thinking) aspects are associated with these action tendencies. According to research findings, negative emotions are linked with a focusing (narrowing) of attention, in contrast with positive emotions, which are associated with an expanding of attention (e.g., Basso, Schefft, Ris, & Dember, 1996). This focusing is functional; the individual can attend specifically to the threat or other relevant stimulus and block out other stimuli, thus being maximally prepared to take the action necessary for survival.

Fredrickson (2001) has developed a theory of positive emotion that has proven helpful for understanding positive emotions and that additionally serves to shed light on the function of negative emotions. Her *broaden-and-build theory* proposes that positive emotions function to broaden our perceptions and cognitions, leading to an openness and flexibility in thinking. The benefit of positive emotions comes in the long run (the *build* part of her theory) because while broadening, the individual also builds physical, intellectual, and social resources that can help him in the future. For instance, while feeling joy and playing (say, a game of softball), the individual may build muscular strength and coordination. Additionally, he may exhibit glee and have a good laugh with others, building social relationships. By contrast, negative emotions are most helpful in the short term; in general, negative emotions have little in the way of building effects. Those negative emotions that are functional arise as a reaction to an immediate stimulus, are linked with a tendency to produce a fairly specific action, and typically dissipate at the conclusion of the event.

See also ambivalence, anger, anxiety, contempt, depression, disgust, dysphoria, fear, grief, guilt, hate, hopelessness, jealousy, Positive and Negative Affect (Activation) Schedule, positive emotions, sadness, shame.

Further Reading:

Fredrickson, B.L., & Cohn, M.A. (2008). Positive emotions. In M. Lewis, J.M. Haviland-Jones, & L.F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 777–796). New York: Guilford.

References:

Basso, M.R., Schefft, B.K., Ris, M.D., & Dember, W.N. (1996). Mood and global-local visual processing. *Journal of the International Neuropsychological Society, 2*, 249–255.

Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218.

Frijda, N. H. (1986). *The emotions.* Cambridge, England: Cambridge University Press.
Frijda, N. H. (1994). Emotions are functional, most of the time. In P. Ekman & R. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 112–122). New York: Oxford University Press.
Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology, 11*, 375–424.

Neuroticism

Among the most significant and well-researched traits in personality psychology is neuroticism, a constellation of attributes that are primarily negative emotions. The most central emotions are fear/anxiety, depression/sadness, and anger/hostility. Neuroticism is a trait continuum such that each individual possesses anywhere from very low to very high levels of neuroticism. The low end of this trait is also called *emotional stability*; high neuroticism is *low emotional stability* and low neuroticism is *high emotional stability*.

The person who is extremely high in neuroticism is not only fearful, depressed, and angry but also moody, nervous, high strung, temperamental, and insecure. An individual who is low in neuroticism (high in emotional stability) is not necessarily high in positive emotions, such as happiness, but experiences low levels of negative emotions. This individual could be described as stable, secure, self-assured, relaxed, and contented.

Ozer and Benet-Martínez (2006) discuss several traits, including neuroticism, and how they are related to "individual outcomes," "interpersonal outcomes," and "institutional outcomes." Not surprisingly, high neuroticism is generally associated with negative outcomes in each of these arenas. For example, those high in neuroticism have higher rates of physical symptoms, psychiatric illness, stress, and loneliness and lower satisfaction with both interpersonal relationships and work life.

Some researchers have hypothesized that neuroticism may have a biological basis. The British psychologist Hans Eysenck proposed that neuroticism may be associated with activity of the limbic system, a set of structures in the brain theoretically involved in the experience and regulation of emotion. His and other general theories have failed to find much support. However, one brain structure, the amygdala, is implicated in the experience of a specific emotion: fear. LeDoux (1996) argues that when danger is perceived, the amygdala activates different responses (endocrine, autonomic, behavioral) to contend with the danger. Nonetheless, the direct connection between the amygdala and the trait of neuroticism, should it exist, has not yet been demonstrated. Since neuroticism is linked to significant suffering, and since much about it is still unknown, it will likely remain a popular topic of study in psychology and related fields.

See also affective personality traits, amygdala, fear, lability (emotional), limbic system, negative emotions, PEN model of personality, personality, regulation of emotion, temperament.

Further Reading:

Harary, K., & Robinson, E. D. (2005). *Who do you think you are?* London: Penguin Group.

References:

LeDoux, J. (1996). *The emotional brain: The mysterious underpinnings of emotional life.* New York: Touchstone.

Ozer, D. J., & Benet-Martínez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57*, 401–421.

Neurotransmitter

Neurotransmitters (also referred to as *neuromodulators*) are chemicals in the body that convey messages between neurons (nerve cells). Types of neurotransmitters include monoamines, amino acids, and peptides. The major monoamines include dopamine, serotonin (5-HT), norepinephrine (noradrenaline), epinephrine (adrenaline), acetylcholine, and melatonin. Amino acids include gamma-aminobutyric acid (GABA), glutamate, aspartate, and glycine. Other neurotransmitters are adenosine and histamine.

In 1904, British scientist T. R. Elliott found that the substance extracted from the adrenal glands (adrenaline) mimicked actions of the sympathetic nervous system (SNS). The SNS is responsible for regulating the fight-or-flight response, including increased heartbeat, blood pressure, and perspiration. In 1914, British physiologist Sir Henry Halett Dale (1865–1968) investigated the active substance in ergot, a fungal infection of wheat or rye. Ergot has strong effects on the central nervous system, including death. Dale found that the active substance in ergot (later chemically identified as acetylcholine) would reverse the effects of adrenaline (Sabbatini, 2003). In the 1920s, Otto Loewi, a professor of physiology in Vienna, Austria, did an experiment with two frog hearts. Stimulating a nerve on one frog heart resulted in inhibition of the heartbeat. When he infused the second frog heart with material from the first, the second heart showed a similar effect. He was able to demonstrate that a substance (later identified as acetylcholine) was responsible for the inhibiting effects on the heartbeat. He used a similar technique to demonstrate the effects of adrenaline as an excitatory (stimulating) substance. In research conducted in the 1920s and 1930s, Sir Henry Dale demonstrated that neurotransmitters could also act in the voluntary nervous system. For their work clarifying the role of neurotransmitters, Loewi and Dale shared the Nobel Prize in 1936 (Sabbatini, 2003). The catecholamines (dopamine, norepinephrine, and epinephrine) were studied in the 1950s and 1960s. Swedish researcher Ulf Von Euler and American researcher Julius Axelrod received the 1970 Nobel Prize for their work identifying and studying the metabolism of norepinephrine (Sabbatini, 2003). Amino acids have been studied since the 1960s (Gordon, 2000). Several peptides studied in the 1970s—Substance P, leucine, and methionine-enkephalin—were all found to be involved in the sensation of pain (Gordon, 2000).

Neurotransmitter receptors alter cellular excitability. Some neurotransmitters are primarily *inhibitory* (e.g., GABA and glycine), others are primarily *excitatory* (e.g., L-glutamate), and others may serve multiple functions (both inhibitory and excitatory). An *excitatory* neurotransmitter increases the probability that a target receptor cell (neuron) will activate (fire), while an *inhibitory* one decreases this probability. Neurotransmitters transmit signals by binding to specific *receptor* cells. For example, the neurotransmitter dopamine (DA) only binds to DA receptors. After a neurotransmitter is released into the *synapse* (a tiny space between cells), it may bind to a receptor, be destroyed by enzymes, or be reabsorbed by the neuron. The reabsorption mechanism is known as a *reuptake transporter pump.* Through [boilerplate] some neurotransmitters are recycled so that they can be used over and over (Preston, O'Neil, Talaga,

2008). Neurons continuously manufacture new neurotransmitters to replenish those lost through enzymatic degradation.

Some neurotransmitters have been linked with certain functions. For example, acetylcholine has been implicated with memory. Dopamine is associated with reward and addiction. Addictive drugs (e.g., cocaine, heroin, methamphetamine) primarily affect the dopamine system. Endorphins are associated with pain, norepinephrine with memory and the fight-or-flight response, melatonin with circadian rhythms and the body's biological clock, and serotonin with mood and aggression. Some psychiatric medications make use of the reuptake transporter system to block specific neurotransmitter receptors. Drugs that block reuptake make more of the neurotransmitter available for use in the synapse. Antidepressant medications such as selective serotonin reuptake inhibitors (SSRIs) block serotonin reuptake. Antipsychotic medications that block dopamine receptors are used to treat schizophrenia. Benzodiazepines (such as Valium) prescribed to treat anxiety bind to specific sites in GABA receptors. The functions and effects of neurotransmitters depend on the location of receptor neurons, interconnections with other neurons, and interactions among brain and body regions. Factors and relationships are often complex; often several neurotransmitters and interactions among multiple brain regions influence human behavior, cognition, and emotion. As research continues to shed light on these relationships, new medications are being developed to increase treatment effectiveness and decrease side effects.

See also antidepressant, antipsychotic, anxiety, anxiolytic, atypical antidepressants, benzodiazepine, depression, schizophrenia, selective serotonin reuptake inhibitor, serotonin.

Further Reading:

National Institute of Mental Health, *The brain's inner workings* (five-minute video hosted by Leonard Nimoy that lead viewers deep into the brain, introducing the physical, chemical, and electrical events that occur in the normal brain): http://mentalhealth.about.com/library/rs/brain/blcd.htm

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Nonverbal Expression

Humans have many different ways of expressing their emotions nonverbally. These include facial expression, body posture, body movements, vocal expression, touch, use of space (e.g., how closely one sits or stands to another person), appearance (e.g., clothing, grooming, hair style, etc.), and others. In the late 1800s, after having developed his theory of evolution by natural selection, Charles Darwin became interested in studying the nonverbal expression of emotion. He wrote a now classic book, *The Expression of the Emotions in Man and Animals*, originally published in 1872. Darwin's book includes descriptions, drawings, and photographs of facial, body posture, and other types of emotional expressions in several species, including domestic dogs, domestic cats, several monkey species, several bird species, and humans. Darwin described expressions associated with several emotions, including sadness, anger, high

spirits, contempt, disgust, fear, and surprise. For example, he described and graphically represented that a threatened dog or cat displays a snarling expression that looks similar to the angry expression of a human. Darwin argued that the existence of these similarities demonstrates that emotional expression must have evolved through natural selection in the same way that other characteristics evolved. He further contended that the expressions must serve a function; they enhance survival of the organism. His observations also suggested that emotions exist as distinct categories (e.g., happiness, anger, sadness, fear) because specific facial and other expressions are associated with specific emotional states.

More recently, individual researchers have tended to focus on modes of nonverbal expression such as facial expression or vocal expression. The most well known of the modern researchers on nonverbal expression of emotion is American psychologist Paul Ekman, who began researching facial expression with his colleagues in the 1960s. Ekman and Friesen's 1975 book *Unmasking the Face* describes in detail the movements of facial muscles that are associated with specific emotions. The book is also filled with photographs illustrating the descriptions. In the 1970s, Ekman and Friesen also developed the Facial Action Coding System (FACS) for categorizing and classifying facial expressions based on how muscular action in the face affects the appearance of the face. The system is used by psychologists and other behavioral scientists, computer scientists, animators, and others.

Other researchers have specialized on other modes of expression. For instance, Bachorowski and Owren (2008) and colleagues and Sherer and colleagues (e.g., Johnstone & Sherer, 2000) have studied vocal expression of emotion extensively. The study of nonverbal expression of emotion has produced applicable findings, such as Ekman's research on facial expression, and thus nonverbal emotional expression remains a popular research topic.

See also animals, body language, Charles Darwin, deimatic, display rules, Paul Ekman, Facial Action Coding System, facial expression, universal signals, vocal expression.

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Nucleus Accumbens

The nucleus accumbens (NAc; also known as the [illegible] *accumbens septi*) is part of the ventral striatum, which is part of the basal gan[illegible] of the brain. The [illegible] serves as an interface between the limbic system and the m[illegible] ystem [illegible] brain. The NAc

sometimes referred to as the brain's pleasure center, is believed to play a role in reward, pleasure, addiction, laughter, fear, and the placebo effect. Neuroimaging studies—such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET)—have helped shed light on the function of the NAc.

Two neurotransmitters (chemical messengers), dopamine and serotonin, are instrumental in the functioning of the NAc. Dopamine release in the NAc seems to promote desire, while serotonin affects inhibition and feelings of satiation. Addictive drugs—including cocaine, amphetamines, alcohol, opiates, cannabis, and nicotine—seem to affect the NAc. NAc activation and dopamine release in the NAc have been found when listening to music. Together, the brain's ventral tegmental area (VTA) and the NAc are involved in the experiencing of pleasure and reward (Menon & Levitin, 2005). The NAc also seems to be involved in the experience of humor: research participants exposed to funny cartoons demonstrated activation of the NAc, ventral striatum, VTA, and amygdala, all implicated in dopamine-related reward processing and all components of the brain's limbic system (Mobbs, Greicius, Abdel-Azim, Menon, & Reiss, 2003).

The *placebo effect* is based on expectations. For example, if an individual is given a pill and told that it will relieve pain, and if that person expects or anticipates pain relief, she may experience pain relief, even if the pill contains no actual medicine (a placebo). The placebo effect can be observed by the expectation of pain, pain relief, or other rewarding or aversive experiences. Research has observed (through PET scans) dopamine release in the NAc during placebo tests. The magnitude of the dopamine release was proportional to the anticipated effectiveness of the placebo (Scott et al., 2007).

A study of children and adolescents at risk for major depressive disorder showed greater activation of the NAc and amygdala when viewing fearful faces, and lower activation when shown happy faces, than adolescents with low depression risk (Monk et al., 2008). Deep brain stimulation (a type of psychosurgery) of the NAc is being investigated as a promising therapy to treat severe, treatment-resistant depression and obsessive-compulsive disorder (Dumitriu, Collins, Alterman, & Mathew, 2008).

See also amusement, depression, limbic system, major depressive disorder, neurotransmitter, obsessive-compulsive disorder, pleasure, psychosurgery, serotonin, substance abuse.

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Nutritional Therapies

Nutritional therapies involve using dietary regimens or supplements to treat various conditions, including mental health disorders. Dietary supplements may include vitamins, fish oils, minerals, amino acids, herbs, or other botanicals. Dietary regimens may include functional foods, such as chocolate, cranberries, soy, or nuts, for their specific properties or functions. Whole diet therapy may involve restricting or eliminating certain foods (e.g., saturated fats, carbohydrates, gluten, sugar, caffeine) or increasing intake of other foods (e.g., protein). Nutritional therapies may be employed instead of, or in addition to, standard pharmaceutical treatments. Mental health disorders that have been treated nutritionally include major depressive disorder (MDD), bipolar disorder, obsessive-compulsive disorder (OCD), anxiety disorders, insomnia, fatigue, and schizophrenia. Nutritional therapies have also been used to treat conditions such as autistic spectrum disorders and attention-deficit hyperactivity disorder (ADHD) and to improve cognitive function (e.g., memory).

In 1968, renowned chemist Linus Pauling published a controversial article about orthomolecular psychiatry, a biochemical model that explored nutritional therapies for mental diseases (Hoffer, 2008). Pauling's theories led to the popular megavitamin therapies of the 1970s. While orthomolecular psychiatry was dismissed by mainstream mental health professional organizations (e.g., American Psychiatric Association), the theory sparked interest and further exploration into nutritional therapies for mental health disorders. Some of these therapies include supplemental vitamins or glycine for schizophrenia, kava kava (*Piper methysticum*) for anxiety, valerian (an herb) and melatonin (a pineal hormone) for insomnia, ginseng and ephedra for fatigue, and ginkgo bilboa to improve memory (Elkins, Marcus, Rajab, & Durgam, 2005).

The neurotransmitters (chemical messengers in the brain) serotonin, dopamine, noradrenaline, and gamma-aminobutyric acid have been implicated in depression, bipolar disorder, and schizophrenia. Some individuals with mood disorders (e.g., depression, bipolar disorder) have been shown to have deficiencies of some of these neurotransmitters (Lakhan & Vieira, 2008). Chemicals or substances that the body converts into other substances (e.g., neurotransmitters) are known as *precursors.* The amino acid tryptophan is a precursor to the neurotransmitter serotonin. Tryptophan is found naturally in foods such as milk and turkey. Tyrosine (and sometimes its precursor, phenylalanine) is converted into dopamine and noradrenaline. Dietary supplements containing tyrosine and phenylalanine increase arousal and alertness. Methionine is a precursor of S-adenosylmethionine (SAMe), which facilitates the production of neurotransmitters in the brain (Lakhan & Vieira, 2008). Utilizing dietary supplements with the goal of increasing neurotransmitter production is known as *neurotransmitter precursor therapy.* For some neurotransmitters, use of dietary supplements may influence neurotransmitter synthesis, affecting mood and behavior (Young, 1996).

Some studies have found that omega-3 fatty acids, which naturally occur in fish, may alleviate symptoms of MDD, bipolar disorder, and schizophrenia (Freeman et al., 2006). Omega-3 fatty acids can cause some side effects (e.g., gastrointestinal distress) and may not be suitable for individuals taking anti–blood clotting medications.

Individuals with bipolar disorder or depression have been found to have deficiencies in vitamins C and B (folate), magnesium, taurine, and omega-3 fatty acids (Lakhan & Vieira, 2008). Increasing tryptophan intake has been suggested as a means to treat symptoms of depression and OCD (Lakhan & Vieira, 2008).

St. John's wort (*Hypericum perforatum*) is an herb that has been much studied for the treatment of depression. It has been found to be useful in the treatment of mild to moderate depression but not for severe depression. St. John's wort has also been used to treat fatigue and increase energy. St. John's wort has been associated with exacerbation of psychosis in individuals with schizophrenia and onset of manic episodes in individuals with bipolar disorder. Symptoms of mania may include abnormally high levels of excitement and energy, racing thoughts, and inappropriate or impulsive behavior (Lal & Iskandar, 2000). When combining St. John's wort (or other substances that increase serotonin) with standard antidepressant medications (e.g., selective serotonin reuptake inhibitors), there is a risk of causing a potentially severe reaction known as *serotonin syndrome* (Natural Standard Research Collaboration, 2009). Several herbs and dietary supplements have been found to interfere or interact with prescription medications, including St. John's wort, garlic, glucosamine, ginseng, saw palmetto, soy, and yohimbe (National Center for Complementary and Alternative Medicine, 2007).

Food allergies and food sensitivities have been implicated in emotional, behavioral, and developmental disorders including learning disabilities, ADHD, depression, and autism. Some diets used to treat these conditions include eliminating sugar, caffeine, processed foods, food additives, food colorings, or fruits and vegetables. A gluten-free, casein-free (GFCF) diet—sometimes used to treat individuals with autism—eliminates all dairy products (which contain casein) and wheat products that contain gluten. Studies of the effectiveness of nutritional therapies show mixed results (Shaw, 2008).

Claims about natural treatments or miracle cures for certain conditions may be appealing to people who are seeking relief or are disenchanted with the mainstream medical establishment. Some people try nutritional interventions because they do not like the side effects associated with pharmaceutical medications. Others may use nutritional interventions because they are perceived as more natural, because they may cost less than pharmaceutical medications, or because of lack of access to health care services. There is considerable controversy about the risks and benefits of nutritional therapies. The U.S. Food and Drug Administration (FDA) classifies herbs (such as St. John's wort) as dietary supplements. FDA requirements for testing dietary supplements differ from those of pharmaceutical drugs. Dietary supplements can be sold without requiring studies on dosage, safety, or effectiveness. Possible risks of utilizing nutritional therapies include difficulty regulating dosage, lack of supervision by a health care professional, side effects, or interaction with other medications. In an attempt to treat symptoms, an individual may not be pursuing treatment for the correct diagnosis or may neglect to consider using established treatments. While more medical and mental health practitioners are being trained in integrative approaches—combining standard medical and pharmaceutical treatment with complementary and alternative treatments (CAM)—not all health practitioners are familiar with CAM. This may make it difficult to research effective dosages of nutritional supple-

ments. It may be difficult to avoid dangerous drug interactions when combining CAM (including nutritional supplements) with standard pharmaceutical treatments.

See also antidepressant, antimanic, antipsychotic, anxiety, anxiolytic, autistic spectrum disorders, bipolar disorder, complementary and alternative medicine, depression, major depressive disorder, neurotransmitter, obsessive-compulsive disorder, schizophrenia, serotonin, St. John's wort.

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Obsessive-Compulsive Disorder

Obsessive-compulsive disorder (OCD) is an anxiety disorder characterized by obsessions and related compulsions. Obsessions are intrusive, repetitive thoughts and images that appear uncontrollable. For instance, one might repeatedly experience an idea of germs lurking everywhere. The forms of obsessions include wishes, impulses, images, and ideas. Common themes of obsessions are dirt or contamination, orderliness, violence, aggression, and sexuality. Because obsessions are persistent and upsetting, people with OCD commonly experience distress and anxiety that impairs their daily functions. One's efforts to ignore or reduce these thoughts frequently results in increased anxiety. Despite their failure to ignore their repetitive thoughts, people with OCD are usually aware of the unreasonable and excessive characteristics of their obsessions.

Compulsions are irresistible impulses to repeat a ritualistic act or acts. Though minor compulsions like washing one's hands regularly are common in many people's lives, people with OCD spend a great amount of time engaging in compulsive behaviors. The recurring and rigid behaviors are performed to prevent or reduce anxiety caused by obsessions, and anxiety does typically decrease after performing the acts. However, the activity may not be a realistic manifestation of its apparent purpose. For instance, a person may feel it is necessary to count to 50 to purify her food before eating it. Compulsions take various forms. Some examples of compulsions are cleaning, checking (checking items over and over to make sure they are right such as checking that the doors are locked), touching (touching or avoiding the touching of certain objects), and counting.

Most people with OCD experience both obsessions and compulsions, though some experience only one of these symptoms. It is estimated that about 1 to 2 percent of adults in the United States have OCD (Kessler, Berglund, Demler, Jin, & Walters, 2005). OCD is equally common in men and women. The onset of OCD usually happens in young adulthood.

Explanations for OCD are varied. Abnormally low activity of serotonin (a chemical messenger in the brain) may be associated with OCD. The finding by researchers (e.g., Julien, 2007) that antidepressants such as clomipramine and fluoxetine

(Anafranil and Prozac) reduce the symptoms of OCD supports this view because these antidepressants increase serotonin activity. Another promising line of research from the biological perspective focuses on two areas of the brain, the orbitofrontal cortex (above each eye) and the caudate nuclei, part of the basal ganglia. The theory that these regions are too active in people with OCD is supported by research indicating that symptoms of OCD either originate or diminish after damage to one of these areas (e.g., Coetzer, 2004). Another perspective on causal explanation comes from cognitive theorists. Their view is that while most people have obsessive thoughts, people with OCD interpret them in maladaptive ways; they may believe that their recurring thoughts are somehow "bad"—perhaps morally wrong or dangerous (e.g., Salkovskis, 1985). To alleviate the obsessive thoughts, they perform compulsive behaviors. The compulsions reduce the anxiety and are therefore reinforced. Eventually, a pattern develops.

OCD is commonly treated with some antidepressant medications, particularly ones that increase serotonin activity and that regularize activity in the orbitofrontal cortex and caudate nuclei (Baxter et al., 2000). The success of these medications is moderate or better. Another helpful treatment is exposure with response prevention (a behavioral technique), in which clients are exposed to anxiety-producing situations related to their obsessions (such as engaging in dirty yard work) and prevented from engaging in compulsions (in this case, washing). Effective cognitive approaches guide clients in tracing the origins of their OCD. Clients are taught to challenge possibly irrational beliefs that may be contributing to their obsessions and compulsions. Some research suggests that combinations of effective treatment lead to better success than does using a single treatment.

See also antidepressant, anxiety, cognitive therapy and cognitive-behavioral therapy, exposure with response prevention, serotonin.

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- Radio news anchor Jeff Bell (2007) describes his struggles with, and attempts to overcome, OCD in his memoir *Rewind, Replay, Repeat*.
- Approximately 2.2 million American adults aged 18 and older, or about 1.0 percent of people in this age group in a given year, have OCD (Kessler, Chiu, Demler, & Walters, 2005).
- The first symptoms of OCD often begin during childhood or adolescence; however, the median age of onset is 19.5 (Kessler, Berglund, Demler, Jin, & Walters, 2005).

Optimism

A typical description of optimism is that it is a stable and general tendency to expect the best. Based on more careful thinking and research, psychologists and other scientists have come up with two distinct but related ways to think about optimism. Scheier and Carver's view of optimism was introduced in a 1985 article in the journal *Health Psychology.* More in accordance with the typical conception of optimism, Scheier and Carver (1985) have defined optimism as a stable tendency to "believe that good rather than bad things will happen" (p. 219). This definition focuses on expectancies for the future. Martin Seligman and colleagues (e.g., Seligman, 1991) identified *learned optimism*, which is centered on an individual's attribution process (process of attributing cause) of events that have already occurred. The optimist consistently uses healthy or adaptive causal attributions to account for events and experiences that have happened to him.

Scheier and Carver's concept emphasizes expectancies of good or bad events or experiences (outcomes). In this concept, optimism is optimism regardless of the reason *why* the person expects good things. The person could be optimistic for various reasons, including a strong belief in her own abilities, a belief that other people like her and will help make good things happen, or a belief that she has good luck. The important defining feature is a belief in good outcomes and low likelihood of negative outcomes.

The learned optimism concept was introduced by Martin Seligman and colleagues (e.g., Seligman, 1991). When addressing the question, why did this bad thing happen to me? the learned optimist makes particular types of attributions (beliefs about causes of events). The attributions the optimist makes are external, variable, and specific, contrasted with the internal, stable, and global attributions that the pessimist makes. For example, in answering the questions, why did my boyfriend

break up with me? the optimist would look for reasons outside of the self—"He is immature"—whereas the pessimist would look internally: "I am unloveable." The optimist would see the situation as variable (unlikely to repeat)—"I have had other, positive relationships in the past, and I can in the future"—rather than stable: "I always get dumped in this way in all relationships." The optimist would make a specific attribution—"I am not doing well in the relationship arena right now, but my friendships are great and so is work"—whereas the pessimist would make a global attribution: "My whole life is going downhill." Learned optimism tends to focus more on attributions for negative events than attributions for positive events. Thus learned optimism is more about distancing oneself from negative outcomes than about linking oneself to positive outcomes (Snyder & Lopez, 2007).

Optimism is believed to have bases in both genetics and socialization in childhood. Researchers have found associations between an individual's level of optimism/pessimism and the quality of family life in childhood (i.e., safety of the environment, degree of affection in parental relationship), experience of childhood trauma, divorce of parents, parents' levels of optimism/pessimism, and other environmental factors (for a review, see Gillham & Reivich, 2004). Compared to pessimism, optimism is related to many positive outcomes, including positive work performance, effectively coping with illnesses such as cancer and AIDS, superior athletic performance, and coping well with starting college, to name just a few. See Carr (2004) and Carver and Scheier (2002) for reviews.

A number of programs have been developed to foster optimism in both adults and children. The Penn Resiliency Program was created to increase optimism and prevent depression and anxiety in early adolescence. The techniques can be used by psychological professionals in outpatient treatment and by teachers or counselors in a school setting. The program begins by adapting the ABC model developed by Albert Ellis. The idea behind this model is that when an activating event (A) occurs, the emotional consequence (C) is caused by both the event itself and beliefs (Bs) that are produced by the individual experiencing the event. So, for example, if an individual fails an exam, the emotional reaction is a result of both the failing of the exam and the ideas or beliefs that the individual has. Individuals can modify their beliefs and thus modify their emotional reactions.

In the Penn program, children are shown cartoons with three panels. The "A" and "C" panels are presented and children are to fill in the "B" panel (a "thought bubble") that would fit in the context of the "A" and "C" panels. For example, in one cartoon, the "A" panel shows a student receiving an exam that has many answers marked incorrect. The "C" panel shows the student looking very sad. Children then complete a thought bubble. They may write, for instance, "I am stupid" or "I keep failing." After mastering this exercise, children are taught to identify their typical attributions as *me* versus *not me*, *always* versus *not always*, and *everything* versus *not everything* (this corresponds to internal versus external, stable versus unstable, and global versus specific). Once they can identify their attribution tendencies, they are taught to dispute those tendencies that are pessimistic.

The Penn program includes other techniques for fostering optimism, including assertiveness training, negotiation training, goal setting, including the one-step-at-a-time technique, and others (Penn Positive Psychology Center, 2007).

See also ABC model of emotional reaction, cognitive therapy and cognitive-behavioral therapy, depression, hope, learned helplessness, locus of control, positive psychology, rational emotive behavior therapy.

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Overeaters Anonymous

Overeaters Anonymous (OA) is a worldwide fellowship of people who share a desire to stop eating compulsively. As a self-supporting association, there are no dues or fees for its members, and it has no affiliation with other organizations. OA was founded by Rozanne S. and two other women in 1960 and is headquartered in Rio Rancho, New Mexico. The development of OA was based on Rozanne S.'s observation that the 12-step program founded by Alcoholics Anonymous could be applied to abstaining from overeating. OA helps people to recover from problems related to food such as compulsive overeating, binge eating disorder, bulimia, and anorexia. Members are encouraged to share their experiences with other members to improve their relationship with food. Anyone who wishes to stop compulsive overeating is accepted to its membership.

OA recognizes that overeating is a progressive illness that requires intervention. OA uses the 12-step recovery program, which promotes a change in people's attitude toward food. The 12-step recovery program is believed to be effective for the recovery of compulsive eating at physical, emotional, and spiritual levels. Members of OA vary from those who are extremely overweight to those who are average weight or underweight. The degree of control over eating behavior also differs among members. The symptoms of problems related to overeating include obsession

with body weight, size and shape, constant preoccupation with food, and inability to stop eating certain foods after taking the first bite.

A philosophy of OA is that people's acceptance of their inability to control compulsive eating is the most effective way to recover from the illness. Accordingly, OA does not promote traditional dieting. Instead, OA centers its primary activities on meetings where members talk about their experiences related to compulsive eating and follow the 12-step recovery program as a solution. To accelerate the recovery process, OA encourages members to keep a personal plan of eating that guides them in their dietary decisions, use telephone services to reach out and ask for help, write thoughts and feelings down on paper, and offer any services to fellow sufferers. Since anonymity is a principle of OA, shared experience is held in confidentiality. Mutual understanding and acceptance of their problems help members live their lives without the need to eat compulsively. The average size of a meeting is nine people. About 6,500 meetings are held each week in over 75 countries with approximately 54,000 members worldwide. OA also promotes pamphlets and books, including *Overeaters Anonymous*, *The Twelve Steps and Twelve Traditions of Overeaters Anonymous*, *For Today*, *Lifeline*, and *Alcoholics Anonymous.*

See also Alcoholics Anonymous, 12-step programs.

Further Reading:

Overeaters Anonymous Web site: http://www.oa.org/

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Panic Disorder

Panic disorder is an anxiety disorder characterized by recurring and unpredictable panic attacks. A panic attack is a sudden attack of intense physical and psychological symptoms of anxiety that reaches a peak within minutes and gradually goes away. Panic attacks are accompanied by at least four of the following symptoms: heart palpitations, tingling in the hands or feet, shortness of breath, sweating, hot and cold flashes, trembling, chest pains, sensation of choking, faintness, dizziness, and dearealization (perception that one's environment is strange or unreal) or depersonalization (feeling detached or disconnected from oneself). People can have panic attacks at any time, even during sleep. People with panic disorder experience panic attacks without any clear provocation. They believe that they are having a serious and dramatic experience such as a heart attack or complete loss of control, or even that they are dying. It is common that they go to the emergency room believing that they need treatment for their symptoms. Since they cannot predict when the next attack will take place, their unexplained physical symptoms provoke persistent fear about having another attack. In an attempt to prevent panic attacks, some people restrict their lives by avoiding normal activities. For instance, if an individual experiences a panic attack while on the stairs, he may become so fearful of stairs in any place that he might change his apartment or workplace to avoid stairs. In addition to recurrent unexpected panic attacks, one must have a month or more of one of the following symptoms for a diagnosis of panic disorder: consistent worry about having additional attacks, concern about the consequences or implications of the attack, and significant behavior change due to the attacks.

Panic disorder affects 2 to 3 percent of the U.S. adult population per year (Kessler, Chiu, Demler, & Walters, 2005). Women are twice as likely to be diagnosed with panic disorder as men. Although many people first experience panic attacks in late adolescence or early adulthood, not everyone who experiences panic attacks develops panic disorder. About one-third of people with panic disorder also have agoraphobia (fear of leaving the house). Panic disorder may also be comorbid with depression and substance abuse (including alcoholism; Preston, O'Neal, & Talaga, 2008).

Several biological factors have been linked with panic disorder. Research suggests that people with panic disorder have problems with norepinephrine, a chemical

messenger in the brain), possibly in a part of the brain stem called the *locus ceruleus* (an area in the brain in which much norepinephrine is present). Research has shown that when the locus ceruleus of monkeys is electrically stimulated, monkeys have symptoms of panic (Redmond, 1977). The neurotransmitters serotonin and GABA (gamma-aminobutyric acid) may also play a role in panic disorder since medications that operate on these substances relieve symptoms (Preston et al., 2008). The degree of potential genetic contribution to panic disorder has not been studied extensively.

Cognitive-behavioral theorists suggest that people with panic disorder are highly sensitive to bodily sensations and interpret them in a dramatic fashion (Casey, Oei, & Newcombe, 2004). All people sometimes experience bodily sensations that may seem out of the ordinary such as the heart racing slightly or an unexplained sensation of pain. People with panic disorder may literally panic when experiencing these sensations, believing that some catastrophe, such as a medical emergency, is occurring.

Panic disorder is very responsive to a combination of medication and psychotherapy (Preston et al., 2008). In the initial phase of treatment, it is necessary to eliminate or greatly reduce panic attacks. While cognitive and behavioral techniques may help, anxiolytic medications (e.g., benzodiazepines such as Valium) take effect more quickly. Other medications useful in treatment include antidepressants that affect norepinephrine and serotonin (e.g., selective serotonin reuptake inhibitors and monoamine oxidase [MAO] inhibitors) and anxiolytics that affect GABA and reduce panic symptoms (e.g., benzodiazepines). About 80 percent of panic disorder sufferers experience improvement in symptoms after taking antidepressants that operate on norepinephrine. About half are dramatically improved, some cured, as long as they continue taking the medications (McNally, 2001). After reducing initial symptoms with medication, behavioral techniques (such as systematic desensitization) may be useful to reduce anxiety, phobias, and avoidance of anxiety-producing situations. Cognitive therapy has been found to be highly effective (Hollon, Stewart, & Strunk, 2006). First, therapists educate clients about their bodily sensations, about healthy interpretations of the sensations, and about the nature of panic attacks. Next, clients are trained to make appropriate interpretations even during stressful situations.

Chronic cases of panic disorder may be comorbid with major depression or substance abuse (including alcohol abuse or dependence; Preston et al., 2008).

See also antidepressant, anxiety, anxiolytic, behavior therapy, benzodiazepine, cognitive therapy and cognitive-behavioral therapy, neurotransmitter, serotonin.

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- Approximately six million American adults aged 18 and older, or about 2.7 percent of people in this age group, have panic disorder in any given year.
- Panic disorder typically develops in early adulthood (median age of onset is 24), but the age of onset extends throughout adulthood.
- About one in three people with panic disorder develops agoraphobia, a condition in which the individual becomes afraid of being in any place or situation where escape might be difficult or help unavailable in the event of a panic attack.
- Individuals with panic disorder are 18 times more likely to attempt suicide as people without any mental health disorder.
- It is estimated that only 30 percent of individuals with panic disorder receive treatment. Treatment is effective in 70 to 90 percent of those who do receive treatment.

Source: National Institute of Mental Health, 2009.

Parasympathetic Nervous System

The parasympathetic nervous system (PNS) is a division of the autonomic nervous system (ANS). Neurons in the ANS monitor the organs and internal activities such as heart rate, digestion, breathing, energy mobilization, and glandular activity. The ANS regulates these internal body functions to maintain the body's homeostasis (regulation of the internal body to maintain a stable state). The PNS and the other primary division of the ANS, the sympathetic nervous system (SNS), immediately respond to environmental circumstances and work together to achieve homeostasis. The PNS and SNS have different yet complementary functions; the former is involved in the functioning of the body at rest, whereas the latter is involved in the functioning of the active body. Both systems operate automatically without the involvement of human consciousness.

The PNS originates in the cranial (neck) and sacral (lower) regions of the spinal cord. Most PNS neurons are part of the peripheral nervous system. The peripheral

nervous system mainly controls the functioning of internal organs and muscles in the periphery of the body. Through chains of sympathetic ganglia (nerve complexes), PNS neurons of the spinal cord connect to peripheral PNS neurons. This connection leads to the physiological reactions throughout the body.

The primary function of the PNS is to facilitate development and growth and to conserve energy to be used later. The PNS increases digestive processes, involving secretion of digestive acids and enzymes, secretion of insulin, and movement of the intestinal tract. Other actions include decreased heart rate, decreased blood pressure, constriction of pupils, contraction of the bladder, and others. Parasympathetic activation is necessary for the sexual response; when parasympathetic nerves are active, blood flow is increased to the penis and clitoris.

Results of some studies indicate a link between PNS activity and compassion and related emotions. In one study, participants were shown slides that were intended to evoke either compassion (e.g., slides of crying babies) or pride (slides of positive symbols of one's university; Oveis, Horberg, & Keltner, 2005). The compassion slides were associated with increased parasympathetic activity in participants while the pride slides were not. The researchers interpreted this finding to mean that parasympathetic activity is associated with the positive emotions related to pro-sociality but not to pride (and possibly not to other positive emotions). In other research, participants who reported that they wished to help a suffering woman experienced a decrease in heart rate while they were learning about the tragic circumstances of the woman (Eisenberg et al., 1989). Steven Porges (1995, 1998) has described a theory that a large portion of the PNS, which is present only in mammals, is crucial for social interaction and attachment. According to Porges, this part of the nervous system facilitates adaptation to fluctuating social circumstances and allows the individual to feel relaxed while in the company of others.

The PNS may be active when an individual is experiencing disgust. Levenson (1992) found that heart rate decreases when an individual feels disgust.

See also autonomic nervous system, disgust, physiology of emotion, positive emotions, stress, sympathetic nervous system.

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Parkinson's Disease

Parkinson's disease (PD) was first described by British physician James Parkinson in 1817. PD is a degenerative b[illegible] that results from destruction of neurons (nerve cells) in the substantia ni[illegible] the br[illegible]. The [illegible]tia nigra (which means

"black substance"), part of the basal ganglia, is located in the midbrain (mesencephalon). The substantia nigra has many neurons that produce and utilize dopamine, a neurotransmitter (chemical messenger). Dopamine helps with coordination of muscles and movement. PD symptoms manifest after about 80 percent of the dopamine-producing cells in the substantia nigra have been damaged or destroyed (National Parkinson Foundation [NPF], n.d.). The primary symptoms of PD are tremor (shaking of a limb at rest), bradykinesia (slowness of movement), rigidity (stiffness), and postural instability (balance difficulties). Not all symptoms occur in all individuals; symptoms may only occur (or be more noticeable) on one side of the body. Some individuals with PD have micrographia (small, cramped, handwriting), facial fixity (a blank expression showing little emotion), staring (due to reduced frequency of eye blinking), a shuffling gait, muffled (low volume) speech, or a stooped posture. Symptoms may be a source of embarrassment or anxiety for individuals with PD; depression may accompany PD.

PD usually occurs after age 65, although 15 percent of individuals with PD are diagnosed before the age of 50. Young-onset PD (starting before the age of 40) occurs in 5 to 10 percent of individuals with PD. PD affects 1 in 100 people over the age of 60. PD affects more men than women, and age of onset tends to be later for women (Van Den Eeden et al., 2003). A diagnosis of PD is usually made by a neurologist, sometimes after blood tests and magnetic resonance imaging (MRI) have ruled out other causes. PD is probably caused by a combination of genetic and environmental factors (e.g., exposure to toxins). The characteristic complex of symptoms (tremor, rigidity, bradykinesia, and postural instability) is called *parkinsonism.* Not everyone with parkinsonism has PD. Parkinsonism may be drug induced, vascular (due to obstruction of small blood vessels feeding the brain), or atypical. Medications that can cause parkinsonism include antipsychotics, tetrabenazine (Xenazine, a medication for Huntington's Chorea), reserpine (Harmonyl, used to treat high blood pressure), metoclopramide (Reglan, used to treat nausea and vomiting), and calcium channel blockers (for high blood pressure). Vascular parkinsonism can be caused by multiple small strokes and may result in more gait difficulty (especially in the lower limbs) than tremor. Atypical parkinsonism is considered if an individual has no tremor, an early loss of balance, rapid onset or progression, dementia, low blood pressure when rising from a seated position (postural hypotension), or a poor response to dopaminergic medications.

Treatment for PD usually involves medications that increase the level of dopamine in the brain—either by adding more or inhibiting its breakdown. These medications improve symptoms (tremor, rigidity, and brakykinesia) but do not slow the progression of the disease. Other treatments may include speech therapy, physical therapy, botulin toxin (botox) for dystonia (muscle spasms causing abnormal postures), and antidepressants (to treat depression accompanying PD). Surgery is another option to treat PD symptoms; however, surgery does not slow disease progression. Brain-lesioning surgeries (which destroy small regions of brain tissue) may improve tremor. Deep brain stimulation (DBS) involves implanting an electrode in part of the brain and linking it to a pulse generator (similar to a heart pacemaker). Different types of DBS have benefits for different groups of PD symptoms. New medications are being explored to treat PD symptoms and to slow its progression. Selegiline (an inhibitor of monoamine-oxidase B) has some mild antidepressant effects, but there is no evidence

that it slows the progression of PD (NPF, n.d.). Coenzyme Q_{10} (an antioxidant that plays a role in mitochondrial function) appears to improve motor function and slow functional decline in PD (Shults, 2005). Current clinical tests are exploring whether coenzyme Q_{10} has neuroprotective properties. It is found in fish and meat; lesser concentrations are found in eggs, spinach, broccoli, peanuts, wheat germ, and whole grains.

See also depression, functional magnetic resonance imaging, neurotransmitter.

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- American television actor Michael J. Fox developed young-onset Parkinson's at the age of 30. He established the Michael J. Fox Foundation for Parkinson's Research to raise awareness and research funding for Parkinson's. He has detailed his experiences in his best-selling memoir, *Lucky Man* (2002).
- Other famous people with PD include the following:
  - former U.S. Attorney General Janet Reno
  - evangelist Billy Graham
  - former boxer Muhammad Ali
  - former Alabama Governor George Wallace
  - Chinese leader Deng Xiaoping

Source: http://parkinsons-disease.emedtv.com/parkinson's-disease/famous-people-with-parkinson's-disease.html

PEN Model of Personality

The PEN model of personality was proposed by Hans Eysenck, a prominent psychologist who contributed to the development of modern scientific theories of personality in the 1900s. In developing his model, Eysenck sought personality characteristics

that were clearly distinct from one another (nonoverlapping), heritable, and rooted in biology. Additionally, the model he developed would be a comprehensive taxonomy of personality; all significant traits would be included in the model, and traits would be arranged in a hierarchical fashion. Eysenck's resultant PEN model of personality suggests that personality is made up of three distinct dimensions or *supertraits*: psychoticism–impulse control, extraversion-introversion, and neuroticism–emotional stability (or PEN). As a hierarchal model of personality, the PEN model of personality includes a large number of narrower traits that are subsumed under each of the supertraits. These narrower traits then encompass a number of habitual acts that are characteristic of these traits. Accordingly, the PEN model of personality proposes an organization of personality traits based on a hierarchal structure.

Although heritability is difficult and complex to determine, several researchers have reported that the two traits most studied, extraversion and neuroticism, are moderately heritable (e.g., Birley et al., 2006; Floderus-Myrhed, Pedersen, & Rasmuson, 1980). Eysenck demonstrated that these supertraits are not correlated with each other (and therefore truly distinct; Eysenck & Eysenck, 1985) and that each supertrait is composed of different traits and habits.

Extraversion consists of narrower traits such as being outgoing, talkative, sociable, lively, and sensation-seeking. An extravert is also likely to be carefree, dominant, and venturesome. These narrower traits are accompanied by such habitual acts as going to parties and having many friends. These habitual acts constitute the third level of the PEN model of personality (the first being the three supertraits and the second being the narrower traits just mentioned). Introversion, on the other hand, is marked by personality traits including being quiet and withdrawn. An introvert tends to spend time alone and tends to dislike being in a large crowd. Extraversion and introversion are at the opposite ends on the continuum.

The second supertrait, neuroticism, covers more specific traits. People who score high in neuroticism tend to be anxious, irritable, tense, and moody. On average, people who score high experience high levels of negative emotions in response to stressful events in everyday life. Highly anxious people are found at the one end on this scale. In contrast, people who score low in neuroticism are emotionally stable, carefree, sometimes stoic, and react calmly to stressful events. The third supertrait, psychoticism, represents personality traits including aggressive, cold, egocentric, impulsive, antisocial, creative, and tough-minded. People who score high in psychoticism are often described as loners and tend to be verbally and physically aggressive. They may also be cruel to other people and animals. Though it is easy to describe the ends of each dimension, we need to keep in mind that most people fall somewhere in the middle; extreme cases are rare. An extreme extravert, for instance, craves excitement and needs to have someone to talk to most of the time.

To clarify the causal aspects of personality, Eysenck further provided biological explanations for personality traits. According to his theory, introverts are more easily aroused by activation in parts of the brain than are extraverts. He suggested that the changeability of the autonomic nervous system—which produces the stress (fight-or-flight) response—is associated with neuroticism. He also posited that high testosterone levels and low monoamine oxidase (MAO) inhibitor (a chemical messenger in the brain) activity are linked with high levels of psychoticism. In general, research has not yet clearly supported Eysenck's hypotheses about the relations between

the supertraits and biological aspects (for a review, see McAdams, 2008). However, research in this area is ongoing.

The PEN model of personality has held a prominent place in the history of personality psychology. Several personality inventories (questionnaires) have been developed that measure the three supertraits (and possibly a few additional traits); these inventories are widely used in research in personality psychology and related areas of psychology such as social, abnormal, and health psychology.

See also affective personality traits, extraversion, introversion, neuroticism, personality, temperament.

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Personality

Emotions are of great concern to personality psychologists. This interest centers around the nature of particular emotions and emotion in general, individual differences in experiencing emotion, and the association between emotion and other personality-related processes such as motivation, mental health, physical health, and physiology.

Each of the four major approaches to personality psychology—psychodynamic, humanistic/existential, trait, and social cognitive—addresses emotion. When Sigmund Freud originated his version of the psychodynamic perspective in the late 1800s, *psychoanalysis*, his earliest writings established emotion as a centerpiece of his theory. In Freudian theory, the emotion anxiety is pervasive and powerful, affecting nearly all emotional experience, much of one's personality functioning, and much of one's general life functioning. According to Freudian theory, many of one's impulses, particularly aggressive and sexual ones, have the potential to produce anxiety in the adult because they are considered taboo by society. (These drives did not originally produce anxiety as a child; the child had to learn that such impulses are forbidden.) When a person learns that many of his thoughts and desires are "unacceptable" to society, he tends to repress these mental products. Repression does not eliminate these desires and thoughts; they remain in the unconscious mind, continuing to push for expression. Parts of the mind protect the conscious self from having full knowledge of the forbidden desires. Anxiety arises to keep oneself from knowing the shameful truth (and therefore protecting one's self-esteem), to keep one from engaging in socially

unacceptable behavior, and to warn the individual about possible physical dangers. For instance, an individual may be sexually attracted to his sister-in-law. Engaging in a sexual relationship with her would be *bad* behavior; it would conflict with the family values that he holds most dear, resulting in feelings of shame and guilt; it would threaten to destroy his relationships with family members, and it could be physically dangerous—a baby could result, creating a new responsibility for the man. Anxiety, though painful and unpleasant, thus serves the function of encouraging constructive behavior and discouraging harmful behavior. As mentioned earlier, anxiety is also often interrelated with other emotions. Consciously, in addition to feeling anxious about the sister-in-law without knowing exactly why, the individual may begin to hate his sister-in-law; this decreases the likelihood of making a sexual pass. Sigmund Freud and his daughter Anna wrote about anxiety and the ways that people protect themselves from inappropriate or dangerous behavior through Freudian defense mechanisms (A. Freud, 1936; S. Freud, 1926). Since people have so many forbidden impulses, anxiety is very common. Other emotions that Freudian theory emphasized were guilt and depression.

The humanistic/existential approach is most often associated with American psychologist Carl Rogers, who began to publish his theories in the 1940s. Rogers's theory, like Freud's, emphasizes anxiety over all other emotions. From Rogers's perspective, anxiety arises when one's view of self (self-concept) conflicts with ongoing experiences or with one's emotions (Rogers, 1951, 1959). For instance, if an individual thinks of himself as patient and kind, whereas people regularly react to him as if he is behaving in an impatient, hostile manner, this incongruity causes anxiety. Additionally, if he believes that he is patient and kind but has been feeling impatient and mean for several weeks, he experiences anxiety. Rogers wrote about the development of the tendency toward anxiety. In short, anxiety is more common in people whose self-concepts are too narrow or are distorted. The child's self-concept develops as she interacts with her parents. If parents apply "conditions of worth" to her behavior, meaning that they communicate that they will love and accept her only under certain conditions (e.g., only when she is sweet and quiet), she begins to view herself as possessing only those qualities that are rewarded by her parents. Other characteristics that she naturally possesses are denied awareness because they become associated with painful disapproval by the parents. For instance, a little girl may have many natural tendencies to behave as a tomboy, but her parents disapprove of these behaviors and accept only her feminine behaviors. She thus comes to view herself as feminine only, and consciously denies the tomboy aspects of herself. According to Rogers, the tomboy aspects still exist and will creep into awareness on a regular basis, creating anxiety. She may find herself envious of and angry with women who engage in masculine activities. Conversely, some children grow up with parents who are accepting of most of their natural qualities (communicating what Rogers calls *unconditional positive regard*). Under this circumstance, a child develops a self-concept that is quite accurate, does not have to deny many aspects of the self, and will be relatively free of anxiety.

Trait approaches, which date to the 1930s, have long recognized emotional qualities as central to personality. Early trait theorists were British-American psychologist Raymond B. Cattell and British psychologist Hans J. Eysenck. Cattell (1965) identified three broad categories of traits: ability traits, temperament traits, and dynamic (motive) traits. Temperament traits are emotional. Some examples of temperament

traits on which individuals differ are emotionally stable versus emotionally unstable, outgoing versus reserved, trusting versus suspicious, and relaxed versus tense. Eysenck (1990) proposed three broad trait dimensions that he claimed were the most significant personality characteristics on which people differ: neuroticism–emotional stability, extraversion-introversion, and psychoticism–ego strength. Neuroticism is fundamentally a negative emotion dimension, encompassing anxiety, depression, and anger/hostility. Positive emotions are a large component of extraversion. The most prominent trait model, the five-factor model or the "Big Five," focuses on five main personality dimensions: neuroticism, extraversion, conscientiousness, agreeableness, and openness to experience. All five contain some emotional aspects; however, as in Eysenck's model, neuroticism and extraversion are the primary emotional traits.

Social cognitive approaches dating to the 1940s focus on how individuals take in, process and store, and retrieve information. These cognitive functions are interrelated with emotions, although cognitions are seen as primary. Emotions thus arise from cognitions. For instance, from this perspective, people feel depressed because they have sad thoughts and feel angry because they have hostile thoughts. American psychotherapist Aaron T. Beck (1976) proposed this intimate relationship between cognitions and emotions and was fundamental in creating a modern approach to psychotherapy, *cognitive therapy*, which has proven to be effective in treating a variety of psychiatric conditions, especially depression. American psychologist George Kelly (1955) theorized that our personality is a set of ideas. These ideas, which he called *constructs*, serve as filters through which people perceive the world; people view other people through their own constructs. In attempting to understand other people, one person may utilize the constructs nice–not nice, intelligent-unintelligent, and humorous–not humorous. A second person has different constructs, evaluating people on attractive-unattractive, rich-poor, and so on. In Kelly's theory, anxiety can result when one's constructs begin to do a poor job of aiding in the understanding of the world. In other words, through applying one's constructs, the individual finds that people behave differently than expected, react to him in disturbing ways, and so forth. In Kelly's theory, like other social cognitive theories, emotions arise from cognitive sources.

Personality psychologists have also studied individual differences in emotions and emotion processes without adhering to any of the preceding theoretical perspectives. Topics of interest have included individual differences in intensity of emotion, variability of emotional states, degree to which people experience either positive or negative emotions or both, ability to regulate (modulate) one's emotions in functional ways, and others. For instance, Eaton and Funder (2001) found that individuals with rapidly changing emotions tended to be described by others as generally hostile and fearful.

See also affective personality traits, anxiety, defense mechanisms, PEN model of personality, psychoanalytic perspective, self-image, sensation-seeking and risk-taking, temperament, Type A behavior pattern.

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Personality Disorder

Personality is a long-standing pattern of behavior and inner experience, including characteristic thoughts and emotions. A personality disorder may be present when the following criteria are met: the personality pattern differs significantly from the expectations of the individual's culture in at least two of the following four areas: cognition, emotional response, interpersonal functioning, and impulse control. The pattern is inflexible and generalizes across a variety of personal and social situations. Impairment in social or occupational functioning or significant distress, or both, are present. The pattern is long-lasting, persistent, and originated in early adulthood or earlier.

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000), which lists and describes mental disorders, identifies 10 personality disorders that are separated into three groups. The first group, characterized by eccentric or odd behaviors, includes the paranoid, schizoid, and schizotypal personality disorders. The second group, marked by dramatic, emotional, or erratic behavior, consists of antisocial, borderline, histrionic, and narcissistic personality disorders. The third group features disorders characterized by high anxiety, the avoidant, dependent, and obsessive-compulsive personality disorders (note that obsessive-compulsive *personality* disorder is different from obsessive-compulsive disorder [OCD]). According to Phillips, Yen, and Gunderson (2004), about 9 to 13 percent of adults may be diagnosable with a personality disorder.

In 2009, when the final writing of this book was occurring, diagnosticians were proposing that the current conception of personality disorders be reconsidered. The degree to which diagnosticians can agree on a particular personality disorder diagnosis for an individual is low enough to cause concern (e.g., Jablensky, 2002). Some have complained that is it difficult to distinguish the personality disorders from one another (e.g., Gunderson & Ronningstam, 2001). One proposed solution has been to abandon the 10 personality disorders and instead rate personality disorders in a dimensional fashion. According to this point of view, the personality disorder should

be identified by the intensity or severity of key traits rather than by the mere presence or absence of traits (dimensional view rather than all-or-none view). See Widiger and Simonsen (2005) for an example of such a proposed alternative model.

See also borderline personality disorder, histrionic, personality.

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- Some well-known movies that depict *narcissistic personality disorder* include *Alfie* (1966), *American Gigolo* (1980), *Citizen Kane* (1941), *Lawrence of Arabia* (1962), and *Jerry Maguire* (1996). The 1982 movie *Sophie's Choice* depicted *dependent personality disorder.*

Pet Therapy

Pet therapy, also called *pet psychology* or *animal behavior consulting*, is a field devoted to changing the behavior problems of pets. Pet therapy has its origins in dog training and the practice of veterinary medicine (Overall, 1997) and has been growing in demand in recent years. Among the most common reasons for turning over a cat or dog to an animal shelter are issues of [illegible]. Every year, millions of cats and dogs in the United States are euthanized because of problematical behavior (Hetts, 1999).

Certified pet therapists come from different educational and experiential backgrounds. Veterinarians may become certified by the American College of Veterinary Behaviorists by receiving supplementary education in animal behavior. Veterinary technicians may become certified by their professional group, the National Association of Veterinary Technicians. Certified Applied Animal Behaviorists (CAAB) are certified by the Animal Behavior Society and possess a master's or doctoral degree in a behavioral science or a doctorate of veterinary medicine with additional training in animal behavior. Other organizations certify individuals who do not necessarily have a veterinary, master's, or doctoral degree, and some individuals provide behavioral consulting without any credentials or certification.

Pets can present a wide variety of behavior problems. The most common ones reported by dog owners are aggression toward people or other animals, excessive barking, destructive chewing, and begging. The most common behavior issues for cats are soiling and aggression (Overall, 1997). Causes of behavior problems vary; they include lack of stimulation for the pet, which may be exacerbated by keeping the pet indoors, and conflict between animals in homes with more than one pet.

The goals of pet therapy are to help clients understand their pets' behavior and ultimately to change pets' behavior. Typically, as consulting begins, a medical screening of the pet is recommended to eliminate medical issues as sources of the problem. Additionally, the consultant will obtain a history of the problem behavior, eliciting as much detail as possible (what behavior, how often, when, where). Common techniques that are used to change behavior are two forms of behavior therapy: operant conditioning and classical conditioning. Operant conditioning involves providing rewards, such as food, for desirable behaviors. Punishment is another form of operant conditioning but is not recommended; if possible, the pet's situation should be viewed creatively so that undesirable behaviors are ignored rather than punished, and desirable behaviors that could, in the future, take the place of the undesirable behavior are reinforced. For instance, if one cat is aggressive with another cat, rather than punishing the cat when he aggresses, the owner could spend more time playing with both cats. If two people live in the household, it may be helpful if one person plays with one cat while another person plays with the other cat (so that the dominant cat does not try to completely dominate the play) in the same room. The play time is stimulation and attention for both cats, and the aggressive cat may associate the pleasure he experiences during playtime with the entire situation, which even includes the other cat. He may thus develop a positive feeling toward the other cat (although this is speculation—we cannot really know what an animals "feels"). This association of stimuli (the play situation, presence of the other cat, etc.) is classical conditioning. After the consultant determines a diagnosis, he provides the client with an appropriate behavior modification plan, which may include operant conditioning, classical conditioning, modifying the home environment, stimulating (play) activities for the animal, educating the client about normal and problematic pet behavior, and other solutions (Landsberg, Hunthausen, & Ackerman, 1997).

See also animal-assisted therapy, Animal Behavior Society, behavior therapy, behaviorism.

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Phobia

A person suffering from a phobia is persistently afraid of a particular object or situation. Phobias are extreme and out of proportion to the danger presented by the object or situation, and the sufferer recognizes the irrationality of the fear. The individual can remain calm as long as he can avoid the feared object, but if not, the phobia can be quite disrupting. For instance, if any individual develops a car phobia, many aspects of his life can become more difficult. Phobias are more common in women than in men.

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association 2000) describes three categories of phobias: specific phobia, social phobia, and agoraphobia. The most common is a *specific phobia*, a persistent and unreasonable fear of a specific object, activity, or situation. Examples of common specific phobias include fears of particular animals, blood, heights, enclosed spaces, and flying in an airplane. Up to 9 percent of the population experiences a specific phobia in any given year (Kessler, Chiu, Demler, & Walters, 2005). When exposed to the dreaded object or situation, the individual immediately exhibits intense fear. Many people with a specific phobia experience more than one phobia simultaneously. The most common effective treatments for specific phobias are behavioral treatments called *exposure treatments*. These involve being exposed to the feared object or situation. For instance, in systematic desensitization, the individual is taught a relaxation technique and, while relaxed, is exposed to a mild stimulus of the fear (e.g., if the person fears spiders, she may be placed in a room with an aquarium in which a spider is present). The idea is to associate the feared object with relaxation. When success is achieved with the mild stimulus, the person will be taught to relax while experiencing a more intense version of the feared object, and so on. Other exposure treatments are modeling, flooding, and implosive therapy. Exposure treatments are very effective for simple phobias (Wolfe, 2005).

A *social phobia* is a persistent, irrational fear linked to the presence of other people, which includes public speaking, meeting people, or speaking in groups. Some social phobias are quite specific, such as a fear of eating in public. Up to 7 percent of the U.S. population experiences a social phobia each year (Kessler et al., 2005). People with social phobias are tremendously anxious about embarrassing themselves in social situations. Some sufferers become reclusive, and this avoidance may lead them to seek treatment. Social phobias are commonly accompanied by such physical symptoms as blushing, trembling, and nausea. The individual's fears persist for days and weeks before the feared situation.

Effective treatment for social phobias is more complex than treatment for simple phobias. First, a psychological approach is recommended. This could be an exposure therapy of the sort used for simple phobias or cognitive therapy such as rational emotive therapy, in which a clinician or counselor encourages the individual with the phobia to question her irrational and self-defeating beliefs. As an adjunct to the

psychological approach, social skills training is utilized. Techniques include the therapist modeling appropriate behavior, role-playing between phobic person and therapist, and honest feedback from the therapist. A final treatment is antidepressant or anxiolytic medications, which function to reduce social anxiety in some individuals. Each of these treatments is at least somewhat helpful, and combinations of treatments may be more effective than utilizing a single approach (Heimberg, 2002).

Agoraphobia refers to fear of leaving one's house. Sufferers have sometimes experienced panic attacks and begun to worry that an attack could occur in a public place. Overall, it is the most debilitating phobia; individuals may lose their jobs or friendships or be unable to properly care for their children. Around 2.7 percent of the population suffers from agoraphobia per year (Kessler et al., 2005). Exposure therapy, in which the individual is instructed to go outside the house and remain for a certain period of time, even if fear occurs, is a common treatment for agoraphobia (e.g., Emmelkamp, 1982). This treatment is used over a number of sessions with moderate success.

Although the cause of phobias is unknown, the behavioral theories—classical conditioning and modeling—receive the most support. Classical conditioning occurs when an individual associates two events that occur close together in time and reacts similarly to these events. For instance, if a person falls down the stairs and break her legs, the fear that she naturally experiences with the broken legs might lead to a fear of stairs. Another way of developing a phobia is through modeling. By observing other people who are afraid of a certain object, people may develop fear of the same object. Although research has clearly shown that phobias can be caused through classical conditioning or modeling (Bandura & Rosenthal, 1966; Wolfe, 2005), phobias do not always develop under these circumstances. Thus a more complex causal model for phobias is suggested.

See also behaviorism, cognitive therapy and cognitive-behavioral therapy, fear, rational emotive behavior therapy, systematic desensitization.

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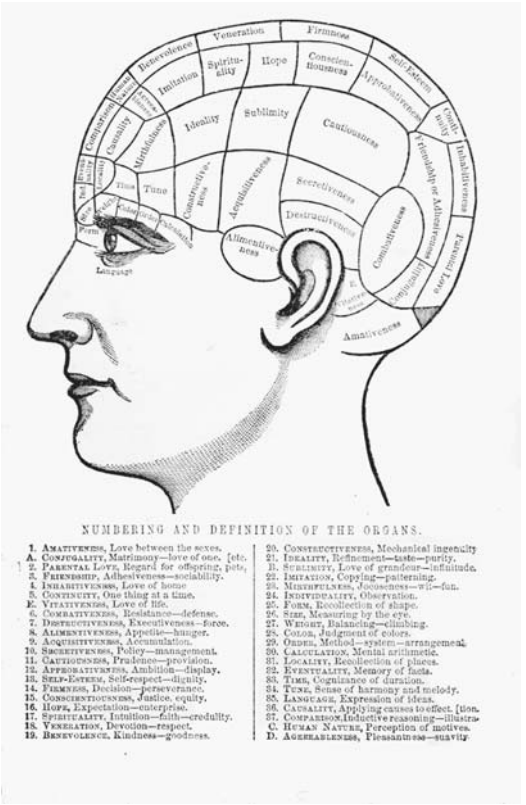
- Well-known billionaire aviator, movie producer, and business tycoon Howard Hughes had a phobia so extreme that he went to great lengths to avoid germs. He spent the last years of his life lying naked in bed in a darkened hotel room (a place he considered a germ-free zone), with tissue boxes on his feet to protect them from contamination. After Hughes's death, a psychological autopsy conducted by Dr. Raymond D. Fowler determined that Hughes's fears for his health probably emerged during childhood. His mother, afraid Hughes would contract polio, checked him every day for diseases and was cautious about what he ate. Later in his life, Hughes went to great lengths to protect himself, developing obsessions and compulsions. He wrote an instruction manual for his staff on how to open a can of peaches. However obsessed Hughes was about contamination from the outside, Hughes neglected his own hygiene, rarely bathing or brushing his teeth (Dittmann, 2005).
- According to the "Phobia List" (http://www.phobialist.com/reverse.html), some lesser-known names of phobias include *triskadekaphobia* (fear of the number 13), *myrmecophobia* (ants), *pogonophobia* (beards), *alektorophobia* (chickens), *leukophobia* (the color white), *ichthyophobia* (fish), *xenoglossophobia* (foreign languages), *genuphobia* (knees), *geliophobia* (laughter), *selenophobia* (the moon), *melophobia* (music), *lutraphobia* (otters), *papyrophobia* (paper), *arachibutyrophobia* (peanut butter sticking to the roof of the mouth), *herpetophobia* (reptiles), *scoleciphobia* (worms), and *hippopotomonstrosesquipedaliophobia* (long words).

Phrenology

Phrenology—the theory that personality traits can be ascertained from the shape of a person's skull—comes from a combination of the Greek roots *phrenos* (mind) and *logos* (knowledge). Incorporating elements of philosophy, physiology, and early neuroscience, phrenology is now considered a pseudoscience. Phrenology was popular in the 19th century and influenced developments in psychiatry, psychology, and neuroscience.

Phrenology was developed in 1796 by Austrian physician Franz Josef Gall (1758–1828). It is based on the concept that the brain is the organ of the mind and that certain brain areas have particular functions—each function is located in a different area of the brain. The size of these areas (or prominences on the surface of the skull) were said to relate to the degree to which a person manifested that mental faculty or character trait. It was believed that the cranial bone (skull) conformed to the convolutions of the brain and that measuring the skull would indicate an individual's personality characteristics. Gall's theories were based on examinations of the heads of his friends and family members as well as studies of the heads of inmates in prisons and asylums. In 1819 Gall published his principles of phrenology in *The Anatomy and Physiology*



19th century etching of phrenological diagram with definitions of the various areas of the human skull. (iStockPhoto)

of the Nervous System in General, and of the Brain in Particular, with Observations upon the Possibility of Ascertaining the Several Intellectual and Moral Dispositions of Man and Animal, by the Configuration of Their Heads. Johann Gaspar Spurzheim (1776–1832), a German physician and a collaborator of Gall, helped to disseminate ideas about phrenology in the United Kingdom and United States. George Combes (1788–1858), a Scottish collaborator of Spurzheim, established the Phrenological Society of Edinburgh with his brother Andrew. American brothers Lorenzo Niles Fowler (1811–1896) and Orson Squire Fowler (1809–1887) were leading phrenologists in the United States. Orson Fowler, Nelson Sizer, and Samuel Wells established a phrenological publishing house in New York City, Fowler and Wells, which published books and journals about phrenology, including the *American Phrenological Journal.* Lorenzo Fowler spent his time in England, where he established a phrenology publishing house (L.N. Fowler and Company). Lorenzo is best known for a china head depicting phrenology regions, which became a symbol of phrenology. Phrenologists were consulted to make hiring decisions, find suitable marriage partners, and predict an individual's future. Phrenology influenced Victorian era literature and became the popular psychology of the day. It was most popular from the 1820s through the 1840s.

Phrenologists would run their hands over the head to feel for bumps and indentations and used calipers to take measurements of the head. This information was used to describe the character and temperament of an individual and address each of the "brain organs." Gall originally identified 26 brain organs; 19 were common in other animal species, and the rest were unique to humans. Later, Spurzheim and Combes divided the scalp into 35 distinct regions, with names such as amativeness, philoprogenitiveness, concentrativeness, love of approbation, imitativeness, wit, and metaphysical spirit. There were separate regions for different types of perception (form, size, weight, color, locality, number, order, time, tune, and linguistics). Many of the brain organs or regions were associated with religious or moral values. As enthusiasm grew for phrenology in the United States, some people began conducting their own research and identifying new phrenological organs, such as love of Bologna sausage,

the propensity to kiss women, the tendency to swindle the public out of money, or the urge to enjoy strong drink (Rothenberg, 2000).

Phrenology was used as an explanation in the case of Phineas P. Gage, a Vermont railroad worker who was injured in an explosion in 1848 that drove a large iron bar through his head. Gage survived the injury with language and motor functions apparently intact. However, he exhibited significant behavior and personality changes, including impaired decision-making and planning abilities, impulsive behavior, use of profanity, and impaired social functioning. In his 1884 book about phrenology, Nelson Sizer explains that the personality changes observed in Gage were due to the iron passing "in the neighborhood of Benevolence and the front part of Veneration" (Damasio, 1994, p. 17). The Benevolence and Veneration brain organs purportedly controlled proper behavior, kindness, and respect for others. Sizer surmised that profanity was the result of damage to Gage's organ of Veneration (Damasio, 1994).

Phrenology was distinct from *craniometry* (the study of skull size, weight, and shape) and *physiognomy* (the study of facial and body characteristics), which also claimed to be able to discern moral character or intelligence. All three theories—phrenology, craniometry, and physiognomy—were used to justify and support racism, eugenics, and theories about differing abilities of males and females. In the 19th and early 20th centuries, anthropology (especially physical anthropology) and ethnology (the branch of science that studies racial differences) utilized these theories to justify segregation.

See also Phineas P. Gage.

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Physical Activity (Exercise) for Depression

Aerobic exercise is an effective treatment for clinical depression. Research on this topic began in full force in the 1980s, utilizing exercise by itself and observing changes in depression over time or comparing exercise and psychotherapy as treatments for depression. In the past 10 years, Blumenthal and Babyak and their colleagues (e.g., Babyak et al., 2000; Blumenthal et al., 1999) have studied exercise in well-controlled experiments, comparing exercise and sertraline (Zoloft, an atypical antidepressant) as treatments for depression. In the[illegible] studies, they found that exercise was better than or equal to Zoloft as a treatment for [illegible]d to moderate de[illegible]ssion.

Exercise may also be used to augment antidepressant medication as a treatment, given that antidepressants are generally effective in reducing, but not eliminating, depression. The experimental investigation of the most effective "dose" of exercise (amount of total exercise per week and frequency of exercise) has not been resolved (e.g., see Dunn, Trivedi, Kampert, Clark, & Chambliss, 2005). Although exercise is beginning to look quite good as a depression treatment, researchers such as Seime and Vickers (2006) have pointed out that special challenges exist regarding implementing exercise as a treatment. Specifically, some depressed patients are highly resistant to initiating an exercise program and are less likely than other people to reinitiate exercise if their exercise routine has been disrupted (e.g., due to sickness such as a cold or the flu). Reluctance to exercise may be related to a relatively low rate of physical activity prior to the onset of depressive symptoms, a high level of pessimism, or a low sense of self-effectiveness associated with depression. Figuring out how to encourage depressed individuals to exercise is a current and exciting topic of study. Some evidence exists that exercise may be an effective treatment for other emotional conditions, including general anxiety, obsessive-compulsive disorder, posttraumatic stress disorder, and substance (drug and alcohol) abuse.

See also atypical antidepressants, depression.

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Physiology of Emotion

An emotion is a complex phenomenon consisting of a number of components, including appraisals (cognitions or thoughts), feelings, and physiological reactions. Two physiological aspects that have been examined extensively have been activity of the autonomic nervous system (ANS) and brain physiology.

American psychologist William James (1884) was instrumental in introducing the idea that emotions involve physiological changes. James argued that when encountering a stimulus that produces an emotion, physiological changes occur before subjective feelings occur. His work and the work of others inspired people to study the ANS to determine its relation to emotion. The ANS is responsible for maintaining homeostasis (a balanced state) and for making energy available for the body's requirements. The ANS has two branches, the sympathetic nervous system (SNS), which is active when the body is aroused or activated, and the parasympathetic nervous system (PNS), which is active when the body is not in an emergency or highly active situation but rather is taking care of vegetative, ordinary functions. (In actuality, both the SNS and PNS are active at all times, but the ratio of activity is related to current

demands of the body.) SNS activation is associated with many bodily changes, including increased heart rate, blood pressure, respiration rate, perspiration, and release of hormones (including adrenaline and noradrenaline). When the PNS is active, in general, opposite bodily responses occur (e.g., decreases in heart rate and blood pressure).

Because emotional experience typically means some degree of arousal or excitement, the SNS was initially the main branch of the ANS that was of interest to researchers. William James's (1884) writings had led others to speculate that specific patterns of SNS activity may be associated with specific emotions. In general, research does indicate that SNS activity is greater (e.g., heart rate increase) when an individual is experiencing one of the primary negative emotions (i.e., fear, anger, or sadness) than when he is experiencing positive emotions or no emotion (for a review, see Larsen, Berntson, Poehmann, Ito, & Cacioppo, 2008). Disgust looks different than the other negative emotions; it may involve a deceleration of heart rate rather than acceleration (Levenson, 1992). As Larsen et al. (2008) point out, however, evidence that specific ANS activity is associated with specific emotions is mixed and inconclusive; they state that ongoing research is likely to shed light on whether a relationship exists between specific emotions and specific ANS activity. Also, the association between specific emotions and specific ANS patterns is likely to be more complex than originally theorized. For instance, as Lang, Bradley, and Cuthbert (1990) have pointed out, behaviors linked to fear include freezing, vigilance, and flight, each of which requires different metabolic responses. Thus emotion-specific ANS patterns may exist only in a limited fashion.

Positive and negative emotions are also associated with activity in the two hemispheres of the brain. In general, the right hemisphere is linked with negative affect and the left hemisphere with positive affect. For example, people with more activity in the left frontal lobe (relative to the right) report more subjective well-being (Urry et al., 2004). Additionally, in a study of separation between infants and their mothers, infants who cried when their mothers left the room had relatively high activity in the right hemisphere immediately before the separation (Davidson & Fox, 1989). Research in this area may be helpful in understanding some emotional disorders such as depression. For instance, Henriques and Davidson (1990) found that people with a history of depression had less activity in the left anterior (front) of the brain than people with no history of depression.

See also amygdala, autonomic nervous system, Cannon-Bard theory of emotion, William James, James-Lange theory of emotion, negative emotions, parasympathetic nervous system, positive emotions, sympathetic nervous system.

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Plato (427–347 BC)

Aristocles was nicknamed "Plato" (*platon* in Greek meaning "broad") because of his broad shoulders. He was born in Athens to upper-class parents. As a teenager and young adult, he was a good student, a wrestler, and an aspiring poet. When he was 20, he heard Socrates speak, was taken with his philosophy and style, and became his student for eight years. Much of what we know about Socrates' thinking comes from Plato's writing, as Socrates himself did no writing.

When Plato was in his late twenties and following some political upheaval in Athens, Socrates was tried and convicted of treason for statements he made during the years of turmoil. He was condemned to death by drinking hemlock and died in 399 BC. Plato was appalled and disgusted and left Athens for a time, traveling to various Mediterranean locations. When Plato was 40, he challenged the ruler of Syracuse, Dionysius, and was apprehended and sold into slavery. Anniceris bought and freed him, and Plato moved back to Athens. There, Plato's friends raised money to repay Anniceris. However, Anniceris refused the money; instead it was used to found Plato's influential school, the Academy, in 387 BC.

The Academy was a center of higher learning in Greece for nine centuries. In AD 529, the school was shut down, reputedly because the teachings there conflicted with teachings of Christianity. The Academy focused on the Socratic way of thinking, which used reason to obtain knowledge. Both Socrates and Plato believed that humans possess immortal souls and that souls are born with knowledge. In the Socratic and Platonic views, reasoning and introspecting led to recollection of knowledge that already exists. This belief interfered with the development of the scientific approach to knowledge, which is dependent on observation rather than recollection of preexisting knowledge. By contrast, Plato's pupil, Aristotle, is credited with hastening and encouraging the development of science because he focused on observation—information derived from one's own sense organs as the source of knowledge—rather than recollection.

No evidence exists that Plato married. He was handsome and had romantic affairs with both women and men. Plato died at age 80 or 81.

Plato's primary contribution to thinking about emotion was his model of the soul or mind. According to Plato, the soul exists in a body and functions on three levels: thought or reason, spirit or will, and appetite or desire. Each component of the soul is important, and none should overwhelm either of the others. Reason, however, is supposed to be the center of the soul. He compared the soul to a charioteer who is running two steeds or horses. The charioteer is reason and has the reigns. One steed is appetite, which he said was disorderly and unruly, and potentially violent.

The other steed, spirit, is energetic and dynamic but obedient. Numerous scholars have noticed the similarity between this model and Freud's (1923/1953) model of the mind, which consists of the reality-based ego, the pleasure-seeking id, and the morality-oriented superego.

See also Aristotle, Sigmund Freud, psychoanalytic perspective.

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Play Therapy

The Association for Play Therapy (APT) defines play therapy as "the systematic use of a theoretical model to establish an interpersonal process wherein trained play therapists use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development" (Association for Play Therapy, n.d.). Play therapy is a counseling approach that utilizes toys and play as the primary vehicle for communication. The rationale for this is that young children often lack the language or ability to verbally communicate what is going on with them. Even older children and adolescents with well-developed verbal skills may benefit from play therapy since they may be better able to act out their issues or communicate their feelings through play rather than through traditional talk therapy.

Play therapy is considered especially appropriate for children between the ages of 3 and 12 years who have difficulty with verbal reasoning but may also be suitable for very young (1-1/2 to 2 years) or older (ages 11–15) children who have experienced trauma. Play therapy may be appropriate for children who are experiencing behavioral or emotional difficulties, including (but not limited to) aggression or acting-out behavior, attachment difficulties, attention-deficit hyperactivity disorder, conduct disorders, phobias, separation anxiety, and selective mutism. Play therapy may also be suitable for children who are contending with grief, adoption, divorce, abuse or neglect, hospitalization, chronic or terminal illness, or traumas such as war, natural disasters, kidnapping, or automobile accidents.

Play therapy approaches range on a continuum from *nondirective* (meaning the child rather than the therapist generally directs what transpires, as in *child-centered play therapy*) to *directive* (e.g., Theraplay, in which the therapist directs the course of therapy). Approaches that combine both directive and nondirective elements include Adlerian and cognitive-behavioral play therapy. In play therapy, children choose from a variety of play materials, including toys, games, and art supplies, which they use to express themselves in the language of play. Toys and play materials offered for therapy cover a range of developmental stages (toys for both younger and older children) and include family/nurturing toys, aggressive toys, creative toys, expressive toys, and pretend/fantasy toys (Kottman, 1999).

The play therapist works with a child's family and/or teacher to formulate goals for the play therapy. Whenever possible, the child is included in the formulation of treatment goals. Play therapy goals vary depending on the child's issues and presenting problems as well as the child's age and developmental stage. General play therapy treatment goals may include enhancing self-confidence and self-reliance, helping the child explore and express feelings, practicing self-control and self-responsibility, developing problem-solving and relationship-building skills, and exploring behavioral alternatives.

Basic play therapy techniques include tracking (describing the child's behavior to the child), restating content (paraphrasing the child's verbalizations), reflecting the child's feelings, returning responsibility (for behaviors or decisions) to the child, and using the child's metaphor (adopting the child's story without imposing one's own meaning or interpretation). Setting appropriate limits with the child and maintaining a consistent structure for play therapy sessions can provide the child with a sense of predictability and self-control and provide a safe space for the child to explore and do therapeutic work. Limits and structure include things such as leaving toys and play materials in the room, starting and stopping sessions on time, and agreements that the child not harm itself or others during the session. Approaches to setting limits in play therapy include stating the limit in a nonjudgmental way, reflecting the child's feelings, engaging the child in redirecting its own inappropriate behavior, and setting up logical consequences that the child can enforce (Kottman, 1999).

The APT emphasizes that the practice of play therapy by licensed or certified mental health professionals requires specialized training and supervised clinical experience.

See also Anna Freud.

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Pleasant-Unpleasant

Among the most basic questions that an emotion theorist may address is how to categorize the variety of experiences of emotion or affect. One approach, called the *basic emotions approach*, is to view emotions as separate categories (e.g., sadness, happiness, fear, anger; Ekman, 1994; Panksepp, 1994). This approach assumes that the emotion categories are qualitatively different; that distinct boundaries exist between the different emotions.

An alternative viewpoint is that there are no distinct boundaries; rather, emotions are best understood by first identifying the underlying continuous dimensions on which they differ. The most well-known models identify two different dimensions. In these models, each emotion is mapped into the space created by these

two dimensions. All these well-known models have identified the same two dimensions or variants of these dimensions: pleasant-unpleasant and activated-unactivated (or high arousal–low arousal; e.g., Russell, 1980; Watson & Tellegen, 1985).

For example, in Russell's (1980) model, for which he labeled one dimension pleasure-misery and the second dimension arousal-sleepiness, examples of how emotional states are mapped onto the two-dimensional space are as follows: excited, delighted, happy, and glad all fit within the pleasure-arousal quadrant; satisfied, content, calm, and relaxed fit within the pleasure-sleepiness quadrant; afraid, angry, distressed, and annoyed fit within the misery-arousal quadrant; and depressed, gloomy, bored, and droopy fit within the misery-sleepiness quadrant.

See also basic emotions.

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Pleasure. *See* Joy.

Polygraph

Often called a *lie detector*, the polygraph is an electronic instrument that measures signs of physical arousal. During the test, electrodes are attached to different parts of a person's body. These electrodes collect physiological changes in breathing, perspiration, heart rate, and other signs of arousal. For instance, blood pressure cuffs placed around the person's upper arm record blood pressure, and electrodes placed on the fingertips measure perspiration. The collected signals are transformed and projected into a visual display.

The examiner first measures the baseline of physiological arousal. Then the subject's physiological responses are monitored while she answers a series of yes-no questions. These yes-no questions are either control questions or test questions. Control questions are questions that are irrelevant to the issue at hand. When used in court cases, control questions are not related to the crime. They include such a question as "Do you live in South Dakota?" or one that may be more emotionally arousing such as "In your lifetime, have you ever stolen anything?" Test questions that are related to crimes may be emotionally arousing. This includes questions like "Did you commit this murder?" The examiner compares the subject's physical responses to these two kinds of questions. If there is an increase in breathing, perspiration, heart rate, or other indicators in response to test questions, but little or no increase in response to control questions, the supposition is that the individual may be (or is) lying. The use of the polygraph is based on the assumption that physiological responses indicate underlying psychological issues. Particularly, it assumes that when people lie, they become anxious and will produce physiological signs of anxiety.

In the mid-1890s, Italian criminologist and psychiatrist Cesare Lombroso used the technique of measuring a suspect's heart rate and blood pressure in an attempt to reveal deception. He speculated that changes in heart rate and blood pressure could indicate an emotional response connected with deception. In 1907, Carl G. Jung used a galvanometer (to measure skin resistance) and pneumograph (to measure breathing) as indications of emotional arousal. In 1914, Vittorio Benussi looked to breathing patterns to discern deceit in suspects. These ideas were brought from Europe to the United States by Hugo Münsterburg, whom psychologist William James had invited from Germany to take charge of a laboratory at Harvard. In 1908, Münsterburg proposed that the courts could use physiological indicators such as heart rate and breathing to detect deception. Münsterburg's student William Marston conducted research and developed what came to be known as the Marston Deception Test (based on blood pressure) in 1917 (Alder, 2002). Marston is often credited as the inventor of the polygraph. While Marston started out as a dedicated psychological researcher, he became a promoter of the lie detector technique and device, often using it as a stage prop in demonstrations. In 1928 Marston used his technique to examine blonde, brunette, and redheaded showgirls at the Embassy Theatre in New York in an attempt to demonstrate a connection between hair color and personality type (Kelly, 2004). In 1921, Berkeley police psychologist John Larson refined Marston's technique, with an adaptation of Benussi's respiration detection device, and a means to continually record readings on paper. Larson called his device the ink polygraph, as it was similar to a device introduced by Scottish cardiologist James Mackenzie in 1902 to record blood flow (Kelly, 2004). While Larson was able to use the ink polygraph to find a shoplifting suspect among a group of coeds living together in a University of California dormitory, Larson believed his results came more from intimidation than from the machine itself. Larson did not believe polygraph results should be introduced in court without supporting evidence. Leonarde Keeler, who had worked with Larson at University of California, advanced the technology with the addition of galvanic skin response to measure changes in skin conductance (caused by perspiration). The Keeler polygraph became the basis of most modern polygraphs (Kelly, 2004). For several decades, William Marston advocated the use of the polygraph in the courts. His reasoning and suggestions for use of the polygraph appear in his 1938 book *The Lie Detector Test.*

The use of the polygraph has been controversial almost since its inception. In the mid-1980s. when the American Psychological Association reported its inaccuracy, the U.S. Congress decided to restrict its use in criminal prosecutions and in hiring (Krapohl, 2002). Numerous studies have pointed out the imprecision of the polygraph as a lie detector. Some critics insist that people can fake the test, for example, appearing innocent of a crime when they are in fact guilty. Other studies have shown that people frequently appear to be lying when they are not. Studies have shown that on average, 8 percent of truths were determined by the polygraph to be lies (MacLaren, 2001; Raskin & Honts, 2002). Today, the polygraph is still widely used by prosecutors, defense attorneys, and law enforcement agencies, although various federal and state laws restrict its use. For instance, in several states it is illegal to use the polygraph in employment decisions, and federal law states that defendants and witnesses cannot be forced to take a polygraph test. Despite the controversy surrounding the test, use of the polygraph increased in legal and law enforcement settings in the 1990s and the following decade.

See also fabrication of emotion, galvanic skin response.

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- Early polygraph research and promoter William Moulton Marston (1893–1947) also authored the *Wonder Woman* comic book under the nom de plume Charles Moulton.
- From the Greek *polygraphos* (writing copiously), *polygraph* literally means writing down many things or writing many copies. Thomas Jefferson used a polygraph machine starting in 1806 to make multiple copies of documents. In the modern context (an instrument for recording several pulsations of the body at the same time), the word *polygraph* was first used in 1871.

Positive and Negative Affect (Activation) Schedule

The Positive and Negative Affect Schedule (PANAS; renamed the Positive and Negative Activation Schedule in 1999) was developed in 1988 by American psychologist David Watson. His research focused primarily on positive emotions, which, compared to negative emotions, had been relatively neglected in psychology before about the 1980s. His instrument was designed to measure emotions for both research and clinical purposes.

The PANAS consists of 20 items, each a single word describing an affect. The 10 positive affect items are enthusiastic, interested, determined, excited, inspired, alert, active, strong, proud, and attentive. The 10 negative affect items are scared, upset, distressed, ashamed, guilty, hostile, irritable, nervous, jittery, and afraid. Participants rate each word on a scale from 1 to 5, indicating the degree to which the word describes their feelings during a certain time (e.g., "in general," a day, a week, a month, etc.).

The PANAS is widely used in research on emotions and mood. An example of a question that has been of primary interest to researchers who use the PANAS is, "Can an individual experience both positive and negative affects at the same time?" For instance, can we have a conversation with a loved friend and experience both pleasure and sadness, or pleasure and anger? Results of research (e.g., see Watson, 2002) have generally indicated that positive and negative affects are independent of one another and that people can experience these divergent types of emotions simultaneously.

See also affect, affective personality traits, mood, negative emotions, pleasant-unpleasant, positive emotions.

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Positive Emotions

The interest in positive emotions has increased dramatically in the past two decades. Since much of the history of clinical psychology and related fields has been concerned with curing ills, the focus of research on emotion has traditionally been on negative emotions. However, at least two developments have led to the increased attention on positive emotions. One has been a concern with the good life, a focus associated with a field called *positive psychology*. A second, related development has been the discovery of the benefits that positive emotions provide. For example, positive emotions have been linked with better health, better interpersonal relationships, a superior ability to cope with stress, and other favorable outcomes (e.g., Lyubomirsky, King, & Diener, 2005).

Humans experience a wide variety of positive emotions or affective states, including happiness, joy, ecstasy, satisfaction, interest, excitement, contentment, pride, awe, love, hope, and relief, to name a few. These states differ on a number of dimensions. One dimension is arousal, with some emotions characterized by high arousal (e.g., excitement), others demonstrating low arousal (e.g., contentment), and many falling somewhere in between. Positive emotions may be other-directed (interpersonal) or self-directed (intrapersonal). Whereas most emotions are self-directed, love is an example of an other-directed emotion. Positive emotions are less distinct than negative ones (e.g., Smith & Ellsworth, 1985; Fredrickson & Branigan, 2001); individuals experiencing a positive emotion are less likely to be able to identify exactly what they are feeling than are individuals experiencing a negative emotion. Related to this, people are likely to experience more than one positive emotion at a time, whereas people often experience only one negative emotion at a time (e.g., Barrett, Gross, Christensen, & Benvenuto, 2001). There is a functional explanation for these facts. Negative emotions typically arise when an individual is threatened in some way and a fairly specific type of behavior is required. For instance, fear occurs when one should flee, anger occurs when one should fight, and disgust occurs when one should expel (e.g., spit out food that is tainted). However, positive emotions are usually not

associated with threats. And positive emotions do, in fact, generate a wider range of thoughts and behaviors, opening oneself up to a greater number of possibilities.

Positive emotions are often associated with a desire to approach or to continue with behavior that has already been initiated (rather than a desire to avoid, which is linked to many of the negative emotions; e.g., Frijda, 1994). This is likely one of the ways that positive emotions are evolutionarily adaptive; positive emotions encourage us to interact with our environments, and without them, we may be passive to the degree that we jeopardize our survival.

A contemporary theory that has received significant support in explaining the function of positive emotions is Fredrickson's (2001) broaden-and-build theory. Fredrickson argues that positive emotions produce their best benefits for the individual over the long term. As previously described, the negative emotions tend to be most functional for emergency situations. However, the positive ones help one to broaden and build for the future.

Fredrickson and Cohn (2008) review research that supports the idea that positive emotions tend to produce a broadening of one's attention and cognition. Several studies show that when presented with a visual stimulus, people who are experiencing positive emotions attend more to global or broader aspects of the stimulus, whereas people experiencing negative emotions pay more attention to the detail of the stimulus. A large body of evidence also shows a broadening of cognition when one is in a positive emotional state. For instance, in one study, Fredrickson and Branigan (2005) induced positive, negative, or no emotions in participants, then requested that the participants list all the things that they felt they wanted to do. Those who had a positive emotion induction listed *more* activities and *more varied* activities than those with either a neutral or negative emotion induction. Furthermore, those with the negative emotion induction listed the fewest behaviors of all. This research indicates that positive emotion is associated with thinking characterized by more openness and flexibility. Additionally, as Fredrickson and Cohn (2008) describe, positive emotions are associated with broadening in the social cognition area, meaning in particular that people become more attentive of others, see fewer differences between themselves and others, and see fewer differences between different groups of people.

The second part of Fredrickson's theory is building. Positive emotions are linked with building enduring resources over time. The resources are, for example, physical, social, and intellectual. Both Fredrickson and Cohn (2008) and Lyubomirsky et al. (2005) review relevant studies. Play, associated with the emotion joy, can lead to physical development that can be helpful for survival. For instance, when a lion cub plays by attacking his sibling, he is practicing hunting skills. Play also can build social resources. When laughing together, people often create a bond of loyalty. As another example, positive emotions can build intellectual resources. For instance, children who are securely attached—those who are most secure in their feelings of love from parents—explore their environments more than do children who are less securely attached. Their explorations lead to intellectual improvements, for instance, they develop excellent cognitive maps (well-developed spatial memories) of the places they explore (Hazen & Durrett, 1982). In sum, the broadening of attention and cognition that occurs while experiencing positive emotions creates attitudes and propensities toward openness and flexibility. The positive emotions also tend to lead to development of physical or intellectual skills or social bonds, both of which may come in handy in the future.

Fredrickson and Cohn (2008) suggest a number of areas in which researchers could focus to further expand our understanding of positive emotions. One is to continue to study the relationship between physiology and positive emotions. Important topics to research include brain regions, brain chemicals (such as neurotransmitters, chemical messengers in the brain), and hormones linked with positive emotion. A second is to investigate how to use positive emotions as interventions, or ways to improve people's lives. For example, positive emotions could be induced to affect physical health, influence psychological health, or improve relationships. Another area of study is to look very closely at the specific positive emotions—rather than studying them as a general class—to see how each emotion relates to important life outcomes. The investigation of positive emotions is rife with possibility.

See also amusement, ecstasy, empathy, euphoria, happiness, hope, joy, love, negative emotions, optimism, pleasure, Positive and Negative Affect (Activation) Schedule, positive psychology, pride, relief, satisfaction, sympathy, temperament, trust.

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Positive Psychology

Positive psychology is a recent development in the field, founded by a group of psychologists and spearheaded by University of Pennsylvania professor Martin Seligman. Positive psychology is concerned with three primary areas of study: positive emotion (such as happiness, love, and contentment; *the pleasant life*), positive character or traits (such as resilience, wisdom, and spirituality; *the engaged life*), and positive institutions (such as positive work environments and positive communities; *the meaningful life*). According to proponents of positive psychology, all three of these aspects are related to life satisfaction, with the latter two (character traits and institutions) holding a stronger relationship than the first (positive em

Positive psychology endeavors to understand the good life and the best in people primarily through application of the scientific method. According to some positive psychologists, this is what distinguishes positive psychology from related approaches such as humanistic psychology, which was founded several decades ago and which also focuses on positive attributes and experiences of humans. Positive psychologists, such as Seligman and Csikszentmihalyi (2000), argue that the research methods of humanists tended to be more qualitative, for example, using case studies, whereas positive psychologists use the types of research methods that are closer to what hard scientists such as physicists or biologists utilize. Some psychologists, for example, Robbins (2008), have challenged this characterization, arguing that humanists have always used both case studies and more rigorous research methods and that positive psychology is essentially "old wine in a new bottle." Debates about both the connections and the distinctions between humanistic psychology and positive psychology are likely to continue. Positive psychology is rapidly gaining in popularity, and some humanists appear to feel that they are not given enough credit for their contributions to understanding the best in people and the best in life.

In the short history of the field, positive psychologists have already produced research findings that help us to understand aspects of human nature. For example, evidence indicates that it is healthier to have a generally optimistic attitude in life than to have a pessimistic one, or even a realistic one. Compared to pessimists, optimists have better outcomes in a variety of domains, including better academic performance, greater satisfaction in interpersonal relationships, more productive work records, and even superior physical health (Snyder & Lopez, 2007). Additionally, positive psychologists have already developed a number of applied programs that train people in positive traits such as optimism, resiliency, and forgiveness. An example of such a program is the Penn Resiliency Program, in which psychologists work with preteens and teenagers to prevent depression. The goal is to teach the children to interpret events in alternative ways from their typical ones; the new interpretations are ones that foster optimism and a greater sense of control over one's reactions to life circumstances.

The first undergraduate course in positive psychology was taught in 1999 at the University of Pennsylvania. By 2007, over 200 courses existed worldwide. Now master's degrees are offered (the master's of applied positive psychology) as well as doctoral degrees. The first PhD program was offered at Claremont Graduate University in Southern California, established by Mihaly Csikszentmihalyi in 2007. Whether positive psychology is a fad or an approach that will continue to remain influential remains to be seen. However, with its resonation with positive American values such as happiness and meaning, its scientific grounding, and its success in real-life applications, the field is off to a good start.

See also affective personality traits, Aristotle, flow, happiness, hope, humanistic psychotherapy, learned helplessness, optimism, positive emotions.

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Positron Emission Tomography

Positron emission tomography (PET) is a body-imaging technique that involves taking a series of two-dimensional pictures of body processes and producing a "movie"—a three-dimensional reconstruction of the progression of the body process or processes on a computer screen. In preparation for the scan, a radioactive substance is administered to the subject, usually through injection into the bloodstream. Fluorodeoxyglucose (FDG)—a radioactive substance that behaves similarly to glucose in the body—is commonly used. Parts of the body that are active use relatively high amounts of FDG; thus PET scans can indicate which parts of the body are active. During the scan, the subject lies down in a machine.

In studying psychological processes, PET generally involves scanning the brain. Mosconi (2005) and colleagues conducted a longitudinal study using PET scans that contributed to our understanding of Alzheimer's disease and general dementia (dementia often develops in an individual prior to expression of Alzheimer's disease). In a sample of 53 elderly research participants, Mosconi studied activity in a particular brain structure, the hippocampus. She conducted PET scans at the beginning of the study, then follow-up PET scans 10 to 24 years after the initial scan. Over the course of the study, 19 participants developed dementia, and an additional 6 developed Alzheimer's disease. Mosconi found that participants who developed either dementia or Alzheimer's disease had less hippocampus activity at the beginning of the study than those who did not develop either form of cognitive impairment. This study, along with many others, has led researchers to conclude that the hippocampus is an important brain structure that is responsible for the formation of new memories.

PET scans are helpful for understanding emotion. Wong, Grunder, and Brasic (2007) reviewed imaging techniques and concluded that both PET and single photon emission computed tomography (SPECT) are beneficial tools in the diagnosis, treatment, and prevention of a number of psychiatric disorders. Thus far, these techniques have been helpful in understanding schizophrenia, alcoholism and other drug abuse, attention-deficit hyperactivity disorder, depression, and other disorders.

SPECT and PET technology are similar to one another but differ in a few significant ways. PET scans can produce images of a wider variety of brain activity than SPECT scans. However, SPECT produces longer-lasting images and therefore can monitor longer-lasting brain activity; the radioactivity used in PET scanning decays too rapidly for viewing of long-lasting activity. Additionally, SPECT is much less expensive to use. Resolution is better with PET (than SPECT); however, both PET and SPECT provide only limited visualization of brain structures, so sometimes functional magnetic resonance imaging (fMRI) is a better option (Smith, Yudofsky, & Gabbard, 2008). Both PET and SPECT scans have a decades-long and distinguished history in

the study of the brain, with new applications of the techniques being discovered on a regular basis.

See also functional magnetic resonance imaging, hippocampus, single photon emission computed tomography.

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Postal

"Going postal" is an American slang expression meaning to become uncontrollably livid, often turning violent. The term typically means that the rage occurs in the workplace, although it can also apply outside the workplace. It commonly means that extreme violence occurs, particularly, murder or attempted murder, but it can also mean rage without physical violence.

The term originated following a number of workplace occurrences in which employees of the U.S. Postal Service (USPS) shot supervisors, coworkers, police officers, or members of the public. Between 1983 and 1997, there were at least 21 such incidents in the United States (Musacco, 2009). What was perhaps the most deadly event occurred in Edmond, Oklahoma, in 1986. On August 20, postman Patrick Sherrill killed 14 employees and wounded 6 at the Edmond Post Office, then committed suicide. Another significant event occurred in 2006 in Goleta, California. Jennifer San Marco, who had been forced to retire from the post office in 2003 due to mental health issues, traveled to a postal processing plant on January 30. She killed six employees, then killed herself. Later, the police found a seventh person murdered at a condominium in Goleta and attributed this killing to San Marco. According to Strauther (2007), this was likely the most deadly workplace shooting in the United States perpetrated by a woman.

The occupation that involves the highest homicide rate is taxi driving, in which 17.9 per 100,000 workers are killed on the job—a risk 36 times greater than for all other employed persons (Sygnatur & Toscano, 2000). However, taxi drivers are much more often murdered by passengers than by coworkers. According to Musacco (2009), data support the idea that the expression "going postal" as applied in its original sense—employees killing others in the workplace—is apt; during the 1980s, 13 percent of workplace homicides occurred at postal facilities and were perpetrated by current or past USPS employees. To put that in perspective, less than 1 percent of the total full-time civilian workforce was in the USPS. Musacco (2009) discusses reasons why such acts of violence occur disproportionately in the USPS.

See also aggression, road rage.

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Postpartum Depression

While having children is generally considered to be a happy event, some women undergo periods of clinical depression following the birth of a child. Postpartum depression is a depressive mood disorder that occurs after childbirth. It typically starts within four weeks following the birth of a child. Many women experience some symptoms of depression or blues after having a baby. Symptoms may include sleepless nights, crying spells, anxiety, fatigue, and sadness; generally, these symptoms disappear within a few days or weeks. Postpartum depression (also referred to as *perinatal depression*) is a severe and long-lasting type of clinical depression; it is different than the commonly experienced "baby blues."

Postpartum depression is estimated to affect 10 to 15 percent of new mothers (Duckworth, 2009) and may last up to a year. Typical symptoms include insomnia, depressed mood, tearfulness, changes in appetite, difficulty coping, loss of interest or pleasure, feelings of inadequacy as a parent, suicidal thoughts, and panic attacks. As a result of this disorder, some women have problems maintaining a healthy relationship with their children and the health of their children can be at risk. In severe cases, postpartum depression can lead to suicide. In rare cases, postpartum psychosis develops, involving intrusive harmful thoughts or actions toward the baby.

Various risk factors have been identified for postpartum depression. Many researchers suggest that changes in hormonal levels during and after childbirth trigger postpartum depression. Levels of hormones such as estrogen and progesterone dramatically drop after childbirth. Since the levels of these hormones may rise up to 50 times above the normal levels during pregnancy, some say that this withdrawal of hormones may trigger postpartum depression in some individuals (e.g., Bloch, Daly, & Rubinow, 2003). In addition to estrogen, thyroid hormones change dramatically after pregnancy, which may leave the mother feeling tired, sluggish, and depressed.

A past personal or family history of mood disorder increases a woman's likelihood of developing postpartum depression (American Psychiatric Association, 2000). A new mother might be overwhelmed by emotional factors that come with a newborn (especially a first-born child) or may be sleep-deprived, anxious, or feel she has no control over her life. Lifestyle changes can influence the risk of depression, including dealing with a demanding baby or older sibling, financial stresses, or lack of support from a partner. Researchers (e.g., Gjerdingen & Center, 2005) point out that family and sociocultural factors may play important roles in postpartum depression. For instance, intimate relationships, friendships, and family relationships may all change. Having a baby produces a financial challenge, yet the new mother may stop or significantly decrease her paid work. Women who have experienced stressful life events (e.g., divorce, death in the family, moving, change in employment) within 12 months preceding delivery have an increased risk of depression. Non-significant risks have

been found between ethnicity or educational level and risk of postpartum depression (Duckworth, 2009).

Treatments for postpartum depression usually depend on the severity of the symptoms. Self-help support groups may be very effective for sufferers with mild symptoms. Those with more severe symptoms require medical treatment. Most benefit from treatments used for other forms of depression such as cognitive therapy or cognitive-behavioral therapy, interpersonal psychotherapy, and antidepressant medication (e.g., Cuijpers, Brännmark, & van Straten, 2008). Nursing mothers will want to consult with their physicians regarding the safety of specific medications on the developing infant.

See also antidepressant, cognitive therapy and cognitive-behavioral therapy, depression, hormones, interpersonal psychotherapy, major depressive disorder.

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- The precise prevalence and incidence of postpartum depression is uncertain. Published estimates range widely: from 5 percent to more than 25 percent of new mothers, depending on the assessment method, the timing of the assessment, and population characteristics. Although many screening instruments have been developed or modified to detect major and minor depression in pregnant and newly delivered women, the evidence on their screening accuracy has yet to be systematically reviewed and assessed (Gaynes et al., 2005).
- Left untreated, postpartum depression can interfere with mother-child bonding and cause family distress. Children of mothers who have untreated post-

partum depression are more likely to have behavioral problems (e.g., sleeping and eating difficulties, temper tantrums, hyperactivity) and delays in language development.

Source: http://www.mayoclinic.com/health/postpartum-depression/DS00546/DSECTION=complications

Posttraumatic Stress Disorder

People's reactions after exposure to traumatic events have been observed since ancient times. In the mid-19th century, names for somatic (physically based) reactions to extreme stress included *soldier's heart*, *effort syndrome*, *shell shock*, and *neurocirculatory asthenia.* Psychological explanations of stress reactions included nostalgia, combat fatigue, and traumatic neurosis (Friedman, Keane, & Resick, 2007). In 1896, German psychiatrist Emil Kraepelin used the term *fright neurosis* to describe anxiety symptoms following injury or accidents (Friedman et al., 2007). *Gross stress reaction* was included in the first edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-I*; American Psychiatric Association, 1952). The *DSM* lists symptoms and criteria of mental health disorders and is used to aid diagnosis in the United States. *Gross stress reaction* was used to describe individuals who experienced symptoms after exposure to extreme stressors such as catastrophes or combat (*DSM-I*). At the height of the Vietnam War, this category was eliminated in the second edition (*DSM-II*; American Psychiatric Association, 1968). John Talbott, a psychiatrist who had served in Vietnam and later became president of the American Psychiatric Association, advocated for this diagnostic category to be put back into the *DSM* as no other *DSM* diagnosis could account for the symptoms he had seen observed in Vietnam (Friedman et al., 2007). During the 1970s, social movements in the United States and elsewhere drew attention to the reactions people exhibited after experiencing interpersonal violence and combat. Mandatory child abuse reporting in the United States, along with rape shield laws and marital rape laws, raised awareness and changed attitudes and treatment approaches. This led to descriptions of child abuse syndrome, rape trauma syndrome, and battered woman syndrome, all of which presented with similar symptoms as those observed in Vietnam veterans and Holocaust survivors. In the next revision of the *DSM*, reactions to all traumatic events were pooled into a single category (Friedman et al., 2007). Posttraumatic stress disorder (PTSD) was included in *DSM-III* (American Psychiatric Association, 1980) and was classified as an anxiety disorder. PTSD criteria have been refined somewhat in subsequent editions of the *DSM.* Current criteria in the *DSM-IV-TR* (American Psychiatric Association, 2000) include the presence of symptoms following exposure to an extreme, traumatic stressor—actual or threatened death or serious injury, or a threat to the physical integrity of self or others—with a response involving intense fear, helplessness, or horror (in children, the response involves disorganized or agitated behavior). Symptoms include persistent reexperiencing of the traumatic event, avoidance of stimuli associated with the

traumatic event, and emotional numbing. Symptoms must have been present for at least one month and must cause clinically significant distress or impairment in social or occupational functioning. When symptoms occur and resolve within four weeks following exposure to a trauma and resolve, acute stress disorder is diagnosed. If symptoms persist beyond four weeks, a diagnosis of PTSD may be considered (American Psychiatric Association, 2000).

While many people are exposed to traumatic events, most of them do not develop PTSD. There is a relationship between the severity of the trauma exposure and the onset of PTSD; this is known as a *dose-response relationship.* In the United States, where 50 to 60 percent of adults have been exposed to trauma during their lifetimes, the incidence of PTSD is about 8 percent. In Algeria (a war-torn country) where trauma exposure is 92 percent, PTSD prevalence is about 37 percent (Friedman et al., 2007). The type of trauma and social climate are relevant to rates of PTSD. In the United States, trauma from interpersonal violence (e.g., rape) appears to be much more toxic than accidents. While about 46 percent of female rape victims in the United States develop PTSD, only 9 percent of female accident victims do. In developing countries, natural disasters (with associated loss of resources) may be more likely to result in PTSD (Friedman et al., 2007). More women than men develop PTSD, and women tend to respond better to treatment. It appears that social support may protect individuals exposed to trauma from developing PTSD (Friedman et al., 2007). Individuals who have been exposed to traumatic events may attempt to self-medicate with alcohol or other drugs, leading to substance abuse or dependence.

Treatments utilized for PTSD include cognitive-behavioral therapy (CBT; with and without exposure), cognitive restructuring, eye movement desensitization and reprocessing therapy (EMDR), coping skills training modality (e.g., relaxation, biofeedback), group therapy, family therapy, and medications. The most successful psychotherapeutic treatments for PTSD are CBT approaches, most notably prolonged exposure, and cognitive therapy (Friedman et al., 2007). Exposure therapies encourage trauma survivors to visualize and cope with distressing trauma-related memories. There are still questions about the effectiveness of EMDR, cognitive restructuring, and coping skills training for PTSD (Committee on Treatment of Post-traumatic Stress Disorder [CTPSD], 2008). Medications that have been studied to treat PTSD include mood stabilizers, novel antipsychotics, benzodiazepines (antianxiety medications), antidepressants, and other drugs (e.g., inositol, cycloserine, and naltrexone). Antidepressants used for PTSD include selective serotonin reuptake inhibitors (SSRIs), monoamine oxidase inhibitors, tricyclic antidepressants, and atypical antidepressants. Some medications have been shown to be effective at treating some symptoms of PTSD. However, because much of the research has been conducted or sponsored by pharmaceutical companies and there are questions about the quality of the research, questions remain about the effectiveness of specific drugs in the treatment of PTSD (CTPSD, 2008; Henigsberg, 2006). Some novel approaches to the treatment of PTSD show promise; these include virtual reality therapy and Internet- or e-mail-based therapy (e.g., Henigsberg, 2006; Knaevelsrud & Maercker, 2007).

Freidman et al. (2007) have reviewed criticisms of the PTSD construct. They maintain that PTSD is a legitimate diagnosis as PTSD has a different presentation from other anxiety disorders, depression, or other psychiatric diagnoses. Regarding the validity of traumatic memories, which have been published by the media as "false

memory syndrome," external verification has confirmed accurate recall and representation of most traumatic events. Other criticisms of the PTSD construct are that it needlessly pathologizes normal reactions to abusive violence and that PTSD is a syndrome bound to European-American cultures. Responses to these criticisms include pointing out the usefulness of PTSD as a diagnostic label to inform treatment decisions and the need for culturally competent treatment of all stress and trauma (Friedman et al., 2007).

See also acute stress disorder, antidepressant, anxiety, anxiolytic, cognitive therapy and cognitive-behavioral therapy, *Diagnostic and Statistical Manual of Mental Disorders*, eye movement desensitization and reprocessing, stress.

Further Readings:

Gateway to posttraumatic stress disorder information: http://www.ptsdinfo.org/

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- Approximately 7.7 million American adults aged 18 and older, or about 3.5 percent of people over 18, have PTSD in any given year.
- PTSD can develop at any age, including childhood; the median age of onset is 23 years.
- About 19 percent of Vietnam veterans experienced PTSD at some point after the war.

- PTSD frequently occurs after violent personal assaults such as rape, mugging, or domestic violence; terrorism; natural or human-caused disasters; and accidents.

Source: National Institute on Mental Health, 2009.

Prefrontal Cortex

The prefrontal cortex (PFC) is situated in the anterior (front) part of the frontal lobe in the brain. The PFC is instrumental in attention and executive function, which includes integrating information from diverse sources, planning, making deliberate decisions, and following through with plans. This includes the ability to reflect on behaviors that occurred in the past and to think about the potential emotional consequences of actions before engaging in behavior. The PFC is also important to *working memory*, which is necessary for the temporary storage and manipulation of information. The PFC plays a part in rational decision making, the ability to engage in socially appropriate behavior, and emotional regulation.

The 1848 accident of Phineas P. Gage, a railroad worker in Vermont, lent some insight into the links between the PFC, emotions, and behavior. Gage survived an explosion that drove a railroad spike through his skull. The injury damaged his frontal lobes, more the left hemisphere than the right, with more damage in the anterior portion than in the back (posterior). There was damage to the ventromedial prefrontal region (middle underside of the frontal lobe), which is critical for normal decision making. While attention, memory, language, and motor functions appeared to remain intact, Gage experienced profound changes in his personality, social functioning, ability to act in his own best interest, and ability to anticipate and plan for the future. Emotionally, he displayed disinhibition (e.g., impulsiveness, using profanity, not following social conventions), emotional lability (unpredictable mood changes), and irritability (Damasio, 1994). Gage's case is illustrative of the impairment associated with his pattern of traumatic brain injury.

In the 1930s, American physiologists John F. Fulton and Carlyle Jacobsen found that creating lesions (wounds) in part of the frontal lobes of chimpanzees (Becky and Lucy) produced behavioral changes. After the surgery, Becky no longer became agitated. However, Lucy (who had previously been docile) became violent (Damasio, 1994). Fulton and Jacobsen presented their findings at the 1935 Second World Congress of Neurology. Portuguese neurologist António Egas Moniz, intrigued by Fulton and Jacobsen's findings, developed a type of brain surgery to treat anxiety, agitation, depression, obsessive-compulsive disorder (OCD), and schizophrenia. In this procedure, known as a prefrontal leucotomy, Moniz severed nerve fibers in the frontal lobes of the brain. The prefrontal lobotomy—a more destructive version of the leucotomy—gained popularity in the 1940s and 1950s to treat patients with depression, anxiety disorders, OCD, schizophrenia, and violent behavior. However, it was found that prefrontal lobotomy caused [illegible] side effects, including apathy, decreased attention span, personality change, seizures, infections, and death (Mashour, Walker, &

Martuza, 2005). Prefrontal lobotomy declined after the introduction of the antipsychotic medication chlorpromazine (Thorazine) in the 1950s and with the increasing popularity of psychoanalysis. Nevertheless, prefrontal lobotomy gave researchers opportunities to examine the link between the PFC and emotions.

Modern imaging techniques, such as functional magnetic resonance imaging (fMRI), positron emission tomography (PET) scans, and diffusion tensor imaging (DTI), have contributed significantly to research that explores the workings of the PFC. PFC damage may result in perseveration, which involves repeating the same behavior over and over. This is seen in conditions such as autism as well as in compulsive disorders such as OCD. Some research has demonstrated that activation of the left PFC is more associated with positive emotions and reward, while activation of the right PFC is associated with negative emotions and punishment (Davidson, Scherer, & Goldsmith, 2002). Left PFC lesions have been associated with crying and depressed behaviors, while right PFC lesions have been associated with laughter, euphoria, or indifference (Hale & Fiorello, 2004). Left hemisphere PFC regions may be implicated in depressive disorders (e.g., major depressive disorder). The orbital prefrontal cortex (a region of the PFC) is thought to be involved in emotional regulation. Damage to this area has been associated with irritability, lability, poor judgment, distractibility, antisocial behavior, and socially inappropriate behavior. The orbital PFC is thought to be underactive in individuals with attention-deficit hyperactivity disorder and overactive in people with OCD (Hale & Fiorello, 2004).

See also depression, diffusion tensor imaging, functional magnetic resonance imaging, Phineas P. Gage, Egas Moniz, negative emotions, obsessive-compulsive disorder, positive emotions, positron emission tomography, prefrontal lobotomy, psychosurgery, regulation of emotion, traumatic brain injury.

Further Readings:

Explore the brain and spinal cord (a visual and descriptive Web site that illustrates and explains the divided brain, the functional areas within the brain, and brain development): http://faculty.washington.edu/chudler/introb.html

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Prefrontal Lobotomy

Prefrontal lobotomy is a type of neurosurgery that involves destroying tissue in the frontal lobe of the brain. It has been used to treat various psychiatric disorders, including depression, anxiety disorders, obsessive-compulsive disorder, schizophrenia, and violent behavior. It was popularized in the United States by American neurologist Walter Freeman (1895–1972). Over 40,000 [illegible] were performed, and it remained in use through the 1970s (Persaud, 200[illegible]

In the 1930s, American physiologists John F. Fulton and Carlyle Jacobsen found that creating lesions (wounds) in part of the frontal lobes of chimpanzees (Becky and Lucy) produced behavioral changes. After the surgery, Becky no longer became agitated. However, Lucy (who had previously been docile) became violent (Weiss, Rauch, & Price, 2006). Fulton and Jacobsen presented their findings at the 1935 Second World Congress of Neurology. Portuguese neurologist and dean of medicine at the University of Lisbon Egas Moniz was intrigued by these findings. Moniz and neurosurgeon Almeida Lima began testing the prefrontal leucotomy on patients with psychoses. In 1936 (after Moniz's initial reports), Americans Walter Freeman and neurosurgeon James Watts started performing the treatment in the United States, which they modified and renamed *prefrontal lobotomy.* Their first 200 cases were deemed successful, although adverse effects such as seizures and apathy were noted. Freeman, enthusiastic about the procedure and seeking ways to make it more efficient, devised a method to avoid drilling through the skull, using a tool similar to an ice pick to break through the orbital bone and sever the nearby prefrontal cortex. Watts broke off relations with Freeman when he learned that Freeman was performing ice-pick lobotomies in his private office, using electroconvulsive therapy (shock treatments) as the only form of anesthesia (Weiss et al., 2006). However, the prefrontal lobotomy became increasingly popular and was often performed by practitioners who were neither surgeons nor physicians (Mashour, Walker, & Martuza, 2005).

Rosemary Kennedy, eldest sister of U.S. President John F. Kennedy, had a mild intellectual disability and learning disabilities. She started exhibiting extreme mood swings and outbursts around the age of 23. Her father, Joseph Kennedy Sr., consulted with Freeman and Watts in 1941. Watts diagnosed her with "agitated depression" (although others have said she had schizophrenia). Freeman performed a frontal lobotomy, which affected Rosemary's cognitive abilities and left her unable to speak more than a few words; she was unable to care for herself or live independently (El-Hai, 2007). She was cared for in a private institution in Wisconsin until her death in 2005, at the age of 86 (Weil, 2005). A great deal of controversy surrounded Freeman's lobotomies of children. His first child patient was a nine-year-old whose brutal tantrums and symptoms of schizophrenia did not abate after his lobotomy in 1939. In 1943, Freeman and Watts lobotomized a four-year-old boy. Lobotomy on a 12-year-old boy in 1945 resulted in the boy's death the night after the operation (El-Hai, 2007). Lobotomy was used as an attempt to eliminate criminal behavior in some individuals. For example, 37-year-old habitual burglar Millard Wright was facing a prison sentence in Pennsylvania. In jail, he refused to eat and threatened to take his life, so he was moved to a state hospital for observation. After a year, he was pronounced recovered and sent back to court to face charges. His attorney requested a postponement so that Wright could undergo a prefrontal lobotomy to treat his "personality disorders." The judge consented to the postponement. However, when Wright returned to court two months later, the original judge had died, and the new judge convicted Wright of burglary and sentenced him to 2 to 12 years in prison. Wright committed suicide (El-Hai, 2007). Popular views of lobotomies performed in state hospitals were reinforced by the film based on Ken Kesey's 1962 book *One Flew Over the Cuckoo's Nest.*

In the early part of the 20th century, somatic (biological) therapies for mental illness included convulsive therapy, insulin shock therapy, hydrotherapy (water therapy), and psychosurgery. The prefrontal lobotomy was replaced in part because of

overcrowded asylums, the costs and burden of mental illness on society, media reports of positive outcomes from prefrontal lobotomy, and a lack of effective alternative treatments. The 1949 Nobel Prize in Physiology or Medicine, awarded to Egas Moniz for his work in psychosurgery, lent validation to the procedure (Mashour et al., 2005). The lobotomy started to fall out of favor after reports of lobotomies being performed in unsterile conditions by unqualified practitioners. Scientific and medical reports questioned the efficacy of the lobotomy and brought to light serious side effects, including seizures, infections, apathy, decreased attention span, personality change, and death (Mashour et al., 2005). Use of the lobotomy declined after the introduction of the antipsychotic medication chlorpromazine (Thorazine) in the 1950s and with the increasing popularity of psychoanalysis. Controversy about psychosurgery was sparked again in the 1970s with the publication of Mark and Ervin's *Violence and the Brain*, which suggested that neurosurgical procedures could treat aberrant limbic system function responsible for much of the violent behavior afflicting society. The landmark case *Kaimowitz vs. Department of Mental Health* (1973), in which a prisoner was offered psychosurgery to temper his aggressive behavior, spurred ethical debate about government use of neurosurgery as a tool of suppression and control. This resulted in guidelines about ethical use and regulation of psychosurgery. Prefrontal lobotomy is illegal in some countries and states (Mashour et al., 2005).

Currently psychosurgery utilizes imaging techniques—such as magnetic resonance imaging (MRI) and computed tomography (CT) scans—to create more accurate, targeted lesions (wounds) that destroy less brain tissue, resulting in fewer side effects. Modern psychosurgery may be used to treat psychiatric disorders such as severe, chronic treatment-resistant obsessive-compulsive disorder or severe mood disorders such as major depressive disorder or bipolar disorder. It is usually a treatment of last resort. Alternatives to psychosurgery include medication, behavior therapy, psychotherapy, and electroconvulsive therapy. Transcranial magnetic stimulation and vagal nerve stimulation are being explored as nonsurgical alternative treatments for depression. Deep brain stimulation—implanting a stimulating probe at targeted brain sites—is being explored as a means to increase efficacy and reduce adverse outcomes of psychosurgery.

See also bipolar disorder, electroconvulsive therapy, functional magnetic resonance imaging, major depressive disorder, Egas Moniz, mood disorder, obsessive-compulsive disorder, prefrontal cortex, psychosurgery, schizophrenia.

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- Notorious American lobotomist Walter Freeman used electroconvulsive therapy as the sole form of anesthesia during prefrontal lobotomies (Weiss, Rauch, & Price, 2006).
- The prefrontal lobotomy was very much a part of popular culture, as illustrated by the quip, "I'd rather have a bottle in front of me than a prefrontal lobotomy." This has been attributed to various sources, including Carlton W. Berenda (1965, p. 196) and an interview with comedian Steve Allen (Freeman, 1976).

Prejudice

In 1954, American psychologist Gordon Allport published his classic book on prejudice, *The Nature of Prejudice.* He described ethnic prejudice as an antipathy toward the other, based on a faulty and rigid stereotype of the other. His definition emphasized both emotional and cognitive (thinking) aspects, as do modern prejudice scholars. Allport said that there can be many emotions involved in prejudice: anger, aggression, hate, resentment, jealousy, and others.

The magnitude of prejudice and probability of acting on prejudice are related to a number of social and personal factors. A primary factor is threat, which may be either personal or societal. Stephan and Stephan (1996) identified three types of threat: realistic threat, symbolic threat, and intergroup anxiety. Realistic threat occurs when the out-group (group that is the object of prejudice) is perceived to threaten the in-group (one's own group) financially or physically. For instance, the out-group may be perceived as taking employment opportunities away from the in-group. Symbolic threat is when the out-group is perceived as a challenge to the in-group's values and view of the world. Intergroup anxiety is the discomfort and stress that occurs when in-group and out-group members interact directly.

Both realistic and symbolic threat, and general threat in society (e.g., war or a declining economy), may increase authoritarianism—a favoring of obedience to authority and devaluing of individual freedom. Authoritarian individuals are rigid, strict, and punitive and prone to prejudice. Prosperity is relatively protective against authoritarianism, and therefore against hostility and prejudice, because realistic and general societal threats do not exist. Symbolic threat can lead to prejudice even when realistic and general societal threats do not exist. According to theory (e.g., Greenberg,

Solomon, & Pyszczynski, 1997), one's worldview typically acts as a barrier against one's awareness of fear of death. When the worldview is threatened by the differing values of an out-group, anxiety (representing fear of death) increases, and hostility and prejudice may follow.

Both the cognitive and emotional aspects of prejudice contribute to the feelings of hostility and related hostile actions that may occur. If people believe that an out-group is gaining in power or status relative to the in-group (a cognitive aspect), to be prejudiced, they must also experience emotion (e.g., anger; Pettigrew, 1999). In a large study, Pettigrew (1997) reported results that suggest a way to combat prejudice. In his study, Pettigrew found that having a friend or friends from another culture leads to decreased prejudice, and he showed that it is often the case that the intergroup friendship occurs first, followed by reduced prejudice, rather than the other way around.

See also aggression, attitude, culture, ethnocentrism, hate, hate crimes.

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Pride

In their textbook on emotion, psychologists James Kalat and Michelle Shiota (2007) define pride as "the emotion felt when someone takes credit for causing a positive outcome that supports a positive aspect of his or her self-concept" (p. 239). As is clear from this description, pride is a positive emotion. It is different from the other positive emotions because (1) the individual experiencing pride feels that he is responsible for the favorable event or outcome and (2) the favorable event supports the person's positive view of himself.

If an individual wins a contest, he would not experience pride if the winner were chosen by a random drawing of names. If the contest were won based on merit, however, the individual would be much more likely to feel proud. The amount of pride would be related to how much the individual values what the contest is about. A struggling artist who puts his heart, soul, blood, and tears into his work would feel very proud about winning a highly competitive art contest. He would feel less proud

about taking first place in an athletic contest at a local fair if athletic performance is not central to his sense of self.

A few emotion researchers, including Jessica Tracy and Richard Robins (2004, 2008), have identified the facial and bodily expression characteristic of pride. When proud, an individual tilts the head back slightly, stands or sits tall and erect, with the arms placed on the hips or raised above the head, and smiles slightly. Tracy and Robins (2008) have studied the expression of pride in three different cultures: the United States, Italy, and the Burkina Faso of West Africa, a tribe of people who, due to their isolation, are unlikely to have learned the expression of pride through exposure to other cultures. Their results suggested that the pride expression is highly similar across these cultures and recognizable between cultures. Tracy and Robins use this evidence and other evidence to argue that pride (in addition to other emotions) is a universal emotion.

Although pride may exist universally, there are some cultural differences associated with aspects of pride such as expression of pride or events that are sources (elicitors) of pride. Since pride has been studied most in the United States, which is an individualistic culture, there is more understanding of pride from this perspective. Most world cultures are more communal (group oriented) than the United States, and pride may manifest somewhat differently in these cultures. For instance, in one study of cross-cultural comparisons, Stipek (1998) asked Chinese and American research participants how proud they would be if they were accepted to attend an elite university and how proud they would feel if their child was accepted into the same university. The American participants projected more pride if they themselves were accepted, whereas the Chinese predicted more pride if their children were accepted. Thus, although it appears that pride is considerably similar across cultures, differences between cultures do exist.

See also basic emotions, body language, culture, embarrassment, guilt, positive emotions, shame, universal signals.

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- The expression "pride goeth before a fall" is paraphrased from Proverbs 16:18–19 (King James version): "Pride goeth before destruction, and an haughty spirit before a fall. Better it is to be of an humble spirit with the lowly, than to divide the spoil with the proud." This expression is a warning to not overstep one's bounds or offend the wrong people, as it might lead to one's downfall.

- The Greek goddess Nemesis exacted retribution on people who thought themselves too god-like. The Greek legend of Icarus (son of Daedalus) is often used as a parable of pridefulness. Icarus fashioned wings out of feathers and wax but flew too close to the sun, which melted the wax; he crashed into Icarian Sea and died.

Primal Therapy

In the 1960s, the psychoanalytic model of therapy (based on Sigmund Freud's theories) started to lose popularity as patients demanded better and quicker results. Arthur Janov developed primal therapy—a process involving reexperiencing repressed psychological trauma—as a means to effect lasting therapeutic change. Primal therapy has been used to treat various conditions, including depression, anxiety, bipolar disorder, substance abuse, and eating disorders.

Arthur Janov was born in 1924. His father drove a meat truck. His mother had a nervous breakdown when he was five years old, which may have influenced his decision to go into psychology. He earned a PhD in psychology from Claremont Graduate School and worked as a conventional psychotherapist for 17 years (Miller & Dodd, 1998). He developed the basis of primal therapy in the late 1960s. In 1968, Arthur Janov and his first wife, Vivian, established the Primal Institute in Los Angeles, California. He has since dissociated himself from the institute, which is still run by Vivian Janov. Arthur Janov now runs the Primal Center in Venice, California, with his current wife, France (a former Primal Institute patient). In 1970, Arthur Janov published *The Primal Scream*, which sold over two million copies.

While some have referred to primal therapy as *scream therapy*, Janov says that this is a misnomer. Screaming is a by-product of pain from early trauma; it is the experiencing of the pain that is essential to primal therapy (not the screaming itself). Primal therapy does not claim to teach coping strategies; its main purpose is to teach people to feel their pain. Primal therapy depends on affective (emotional) release while in an altered state of consciousness to bring about significant emotional change quickly and dramatically (Yassky, 1979). It is designed to be a powerful means to access repressed material. In repression, the conscious mind does not integrate painful memories but stores the experience in the unconscious. Repressed material could include memories and feelings about physical trauma, physical or sexual abuse, or neglect. Deeply felt repressed childhood pain is known as *primal pain.* Primal therapy is a *cathartic* approach; that is, it depends on a dramatic emotional release. Catharsis may also be experienced in other types of therapy (e.g., traditional psychodynamic psychotherapy).

Janov's theories about primal pain are based in part on studies of pain inhibition (Eisner, 2000). Janov proposes that emotional pain is blocked in a similar manner as physical pain. He also claims that reliving a painful event will result in physical changes such as lowering blood pressure. Janov links many adult emotional disorders to birth trauma. For example, he claims that bipolar disorder results from the birth struggle, and migraine headaches are a result of oxygen deprivation during birth. He claims that reliving birth trauma could cause forceps marks to show on the head of a

patient (Eisner, 2000). Janov claims that because all neurosis has its origins in trauma, diagnosis and gaining insight are irrelevant to the treatment and healing process. The primal therapist's role is to get to the early trauma.

The three-week intensive required at the beginning of primal therapy can be very expensive. In addition to the cost ($6,000; Miller & Dodd, 1998), clients are instructed to take a leave of absence from work or school for three weeks. During that time, the client stays alone in a hotel room and is told to abstain from all drugs, alcohol, smoking, sex, TV, radio, and phone calls. The client meets with the therapist daily for long sessions (sometimes many hours) during the three-week intensive. Janov has claimed that the three-week intensive followed by six months of group therapy would result in a cure. However, many therapists and patients were still working together after six or seven years, suggesting that treatment is much more extensive than previously thought (Yassky, 1979). The Primal Center Web site states that "although the length of the therapy varies widely, our recommendation is that all applicants should be prepared to stay an average of one year at Dr Janov's Primal Center. . . . One must have the financial means that will allow for continuing therapy, particularly more individual sessions during the year."

Primal therapy, a dramatic, bold, and different approach in the early 1970s, was initially popular. It was hailed as a universal cure for neurosis with virtually unlimited success. Janov provides case studies and testimonials by celebrities who have undergone primal therapy, such as John Lennon of the Beatles and actor James Earl Jones, to back up his claims that primal therapy can reduce or eliminate many physical and psychological ailments. However, primal therapy has been criticized by mainstream psychologists as lacking a scientific basis, there is little research demonstrating effectiveness (other than anecdotal evidence from case studies), and it has the potential to cause harm. In *The New Primal Scream: Primal Therapy 20 Years On* (Janov, 1991), Janov claims his theories have been validated by scientific studies in the fields of immunology, cancer, and brain science. Unfortunately, references that can be validated are conspicuously lacking in the book; the studies that can be found do not support his claims (Eisner, 2000).

Critics claim that because primal therapy is unimodal (e.g., it utilizes only one method), it has limited success. As there is little or no focus on cognitive approaches, certain issues are not worked through. Current real-life problems and circumstances are ignored. This, combined with a lack of diagnosis, may result in inappropriate treatment for some individuals. People not only might undertake a treatment that is possibly ineffective (or harmful) but may neglect to initiate treatments that have been shown to be effective for their condition (e.g., medication or traditional psychotherapy). Primal therapy may be inappropriate for people with certain diagnoses (e.g., schizophrenia, personality disorders). In primal therapy, there is an inherent power differential: the therapist directs the therapy process with a patient who has been regressed to an infantile state that leaves the client vulnerable and powerless. This creates great potential for abuse (Eisner, 2000). Many practitioners claim to be doing primal therapy but have not been properly trained. Janov himself warns of the dangers and abuses perpetrated by unqualified, untrained practitioners.

See also altered states of consciousness, birth trauma, catharsis, psychodynamic psychotherapy and psychoanalysis, the unconscious mind.

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Primary Emotions

Many philosophers, sociologists, and psychologists have attempted to define and classify emotions. Charles Darwin suggested that there are several *basic emotions:* they are innate, can be distinguished from each other, and are characterized by similar facial expressions across different cultures. In 1896, Darwin suggested that emotional expressions are universal responses, tied evolutionarily to humans by the facial expressions of animals. In addition to basic or universal emotions, emotions have been described as primary and secondary. The terms *primary emotions* and *basic emotions* are sometimes used interchangeably. Some emotion researchers define primary emotions as belonging to all animals (including humans), while secondary emotions are those experienced only by humans (Rodríguez-Torres et al., 2005). Other researchers define secondary emotions as blends of primary emotions, combinations of primary and nonprimary emotions, or any emotion that is not considered primary. Some theories describe primary emotions as simple, basic, or universal and secondary emotions as complex.

Biological (or deterministic) theories, such as those of Darwin and Paul Ekman, see emotions as involuntary, hardwired, patterned responses. Other types of emotions theories—such as social interactionism and social constructionism—take the position that emotions may be voluntary (Smith & Schneider, 2009). American sociologist Theodore David Kemper's social interactionist theory suggests that emotions help maintain and alter social relationships. Social constructionist theories suggest that human emotions result from real, anticipated, imagined, or recalled outcomes of social relationships (Smith & Schneider, 2009). Portuguese neurologist Antonio Damasio describes primary emotions as those that are hardwired and affect brain circuitry in the limbic system. Secondary emotions occur when we experience feelings and form systematic connections between primary emotions and categories of situations that evoke them. Secondary emotions involve functions in the prefrontal and somatosensory cortexes of the brain, in addition to the limbic system (Damasio, 1994).

The number of primary and secondary emotions vary according to the theory. L. Alan Sroufe's 1979 theory lists only three primary emotions—pleasure, fear, and anger—while Carroll E. Izard's 1994 theory purports that there are 11: enjoyment, fear, anger, contempt, surprise, disgust, shame, shyness, distress, guilt, and interest (Smith & Schneider, 2009). Michael Lewis's human development theory (2000) lists six primary emotions, natural, internal mental processes that emerge in infants by six

months of age: happiness, sadness, disgust, anger, fear, and surprise. Other (nonprimary) emotions—such as embarrassment, envy, pride, shame, and guilt—appear later in a child's development. Kemper's social interactionist theory proposes that there are four primary emotions—fear, anger, depression, and satisfaction—that are physiologically based, evolutionarily important, universal across cultures, and linked to important outcomes of social relations. Secondary emotions—acquired through social interactions—include guilt, shame, pride, gratitude, love, nostalgia, and ennui (Kemper, 1987).

In 1971, American psychologist Paul Ekman pursued the idea of primary emotions by looking at the universality of facial expressions across cultures (Smith & Schneider, 2009). Ekman proposed six primary emotions with universal facial expressions: surprise, happiness, anger, fear, disgust, and sadness. Ekman made a distinction between universal emotional expressions (especially facial expressions) common to all cultures and other bodily movements (i.e., emblems and illustrators) that vary among cultures. *Emblems* are body movements that have specific meanings such as nodding the head side to side to indicate no or nodding up and down to indicate yes. *Illustrators* punctuate speech, fill in when searching for words, or help explain what is being said (LeDoux, 1996).

Robert Plutchik's 1962 emotions theory utilizes a wheel or palette approach, whereby eight primary emotions (acceptance, surprise, fear, sorrow, disgust, expectancy, anger, and joy) are arranged on a circle. Primary emotions combine in dyads to make first-order, second-order, or third-order emotions. Two adjacent primary emotions combine to form first-order dyads (e.g., joy + acceptance = love). Emotions that are separated by one other emotion on the wheel (e.g., joy and fear) form second-order dyads (e.g., joy + fear = guilt; LeDoux, 1996).

Emotions researchers have looked at the commonalities between emotions and emotional expressions among different cultures and languages. While this has generated much controversy about what constitutes primary (and secondary) emotions, there is agreement among many cross-cultural researchers that there are four universal primary emotions: happiness, fear, anger, and sadness (Smith & Schneider, 2009).

See also basic emotions, culture, Charles Darwin, Paul Ekman, facial expression, human development, limbic system, prefrontal cortex, universal signals.

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Primates

Primates comprise several human and nonhuman mammals, including lemurs, lorsids, tarsiers, galagos, monkeys, and great apes (chimps, gorillas, orangutans, and humans). Charles Darwin was one of the first scientists to systematically study emotions in animals. Darwin published his ideas about similarities between human and nonhuman emotions in his 1872 book *The Expression of the Emotions in Man and Animals.* Some people consider the idea of animal emotions to be anthropomorphizing—ascribing human attributes (e.g., emotions, motives) to nonhumans. Some emotional expressions that may look similar in humans and nonhumans may actually reflect different emotions. For example, in a human, an open-mouthed, bared-teeth display looks like a smile; in a chimpanzee, it is a gesture of submission. Proponents of the idea that nonhuman animals have emotions point out that emotions are an adaptive way to meet basic challenges (e.g., finding food, finding mates, defending against aggression)—both for human and nonhuman animals. One can get information about animal emotions by observing animals' body posture, eyes, facial expressions, sounds, and social interactions (Hess & Thibault, 2009).

A study that compared emotions between human infants and several nonhuman primates (adult chimpanzees, gorillas, orangutans, several species of monkeys, and lemurs) found that the primate species most closely related to humans exhibited the most similar emotional reactions elicited by tastes. For example, the emotional reactions of great apes (chimpanzees, gorillas, orangutans) were more similar to those of human infants than the reactions of monkeys. Sweet flavors tended to elicit positive emotional reactions, while sour or bitter tastes tended to elicit negative reactions. The valence (positive or negative) and intensity of emotional reactions were evaluated by observing facial expressions (Steiner, Glaser, Hawilo, & Berridge, 2001).

Nonhuman primates have been observed to exhibit empathy, a sense of fairness, and compassion. For example, after one chimpanzee has been attacked by another, a bystander (another chimpanzee) will embrace the victim. Chimpanzees exhibit reciprocity and a sense of fair play. Chimpanzees will be more likely to share food with chimpanzees who have previously groomed them (de Waal, 2006). Nonhuman primates exhibit similar responses to situations that produce fear and anxiety in humans (Barros & Tomaz, 2002). Similar outcomes of early social deprivation or maternal neglect have been found for humans and other primates (e.g., monkeys). Social deprivation, neglect, or abuse early in life may result in altered response to stress, changes in immune function, repetitive behaviors (as in obsessive-compulsive disorder), aggression, addictive behaviors, inappropriate sexual or parenting behaviors, and depression (Gilmer & McKinney, 2003).

Similar brain regions appear to be involved in the processing of some emotions among human and nonhuman primates. For example, in the brain's limbic system, damage to the amygdala or orbitofrontal cortex (part of the prefrontal cortex) leaves monkeys unable to produce appropriate emotional responses to communicate and interact socially with other monkeys. Likewise, in humans, damage to the amygdala or orbitofrontal cortex interferes with the ability to correctly interpret other's emotional

facial expressions and can cause personality changes and inappropriate social interactions (Barbas, 2000). When humans, chimpanzees, and rhesus monkeys produce emotional facial expressions, the left side of the face is involved more than the right. Among other nonhuman primates, in marmoset monkeys, the left side of the face is more involved in silent fear expressions and fear vocalizations, but the right side is more involved in producing calls for social contact (Fernández-Carriba, Loeches, Morcillo, & Hopkins, 2002).

See also animals, anthropomorphism, body language, Charles Darwin, empathy, facial expression, limbic system.

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Progressive Muscle Relaxation

Progressive muscle relaxation involves tensing and relaxing muscles, one at a time or in muscle groups, to induce a state of relaxation. Another objective of the technique is for the participant to learn to feel the difference between muscle tension and muscle relaxation; often people are unaware that they may be holding tension in particular muscles.

The technique was developed by American physician Edmund Jacobson, who published his book *Progressive Relaxation* in 1929. As Jacobson described, stress and anxiety are associated with muscle tension. The physical tension, in cyclical fashion, produces further stress and anxiety. This cycle can be broken by deep muscle relaxation.

To practice progressive muscle relaxation, one may sit in a chair or lie down. Individuals are instructed to tense each muscle group for several seconds, then relax the same muscles for 20 to 30 seconds. The procedure starts with the extremities (usually the hands and arms first), then moves to the interior of the body. Davis, Eshelman, and McKay (2008) provide precise instructions. They also describe a shorthand procedure that can be utilized for quick relaxation (it generally works best with experience and practice) and some cautions and general tips about the procedure.

Regular practice of progressive muscle relaxation is helpful for treating many psychological and physical conditions, including depression (Lawlow, O'Neil, & Mal-

colm, 2003), anxiety (Cheung, Molassiotis, & Chang, 2003), alcoholism (Greeff & Conradie, 1998), headaches (Devineni & Blanchard, 2005), and high blood pressure (Schneider et al., 2005). See Greenberg (2008) for a more comprehensive review of the benefits of progressive muscle relaxation and the conditions that are effectively treated by this technique.

See also autogenic training, deep breathing, meditation, stress.

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Edmund Jacobson, originator of progressive relaxation techniques, dates his interest in nervous excitability to the age of 10, when a serious hotel fire broke out in Chicago. He observed people's frightened behavior and recalled being curious about the way people showed their fear. He decided that when he was old enough to go to college, he would study the treatment of nervous excitability (Gessel, 1989).

Projective Tests

A projective test is a type of personality test that utilizes "ambiguous," unstructured stimuli or tasks such as inkblots, pictures of people and scenes, incomplete sentences, and requests for drawings. During the test, the assessor (person administering

the test) presents stimuli to the assessee (person taking the test) and requests an open-ended response to each stimulus. For instance, the assessor may present inkblots, one at a time, to the assessee, with the instructions, "Tell me what you see" (in each inkblot). When the test is complete, the assessor scores the results, usually according to predetermined scoring guidelines. In the fields of psychiatry and psychology, these tests may be used to measure general personality traits, needs, motives, or unconscious characteristics, to aid in diagnosis, or for other purposes.

The other main form of personality test is an objective test, also called a *personality questionnaire* or *personality inventory*. The objective tests use structured stimuli, such as sentences or short phrases, to which the assessees will respond with structured responses, for instance, true and false or a five-point rating on each test item. Scoring these tests is typically more straightforward than scoring projective tests; assessees receive scores on all scales on the test (i.e., separate scores indicating degrees of depression, paranoia, schizophrenia, and any other personality characteristics that the test measures). For many objective tests, these scale scores are the only possible scores produced by the test.

Projective techniques have existed in psychology since at least the late 1800s. It was Swiss psychiatrist and psychoanalyst Hermann Rorschach's inkblot test, the Rorschach Psychodiagnostic Technique, that ushered in a new tradition of projective testing in psychology and psychiatry. Rorschach published his test and an accompanying manuscript in 1921, and it was exported to the United States several years later. A rapid succession of projective techniques were published in the decades that followed by both American and European authors. Two famous projective techniques that came after Rorschach's were Morgan and Murray's Thematic Apperception Test in 1938 and Machover's Draw-A-Person test in 1949. Most projective techniques are based in psychoanalytic theory, which emphasizes the unconscious mind.

Given the diversity of projective tests, some researchers have attempted to identify the qualities that these tests have in common. Rotter (1954) published a well-known book in which he describes typical characteristics of projective techniques:

- Assessees impose their own structure onto ambiguous stimuli. In the practice of doing this, it is assumed that they reveal aspects of themselves (personality characteristics, needs, conflicts, etc.).
- Test stimuli (items) are unstructured and ambiguous. They include stimuli such as inkblots, pictures of people or scenes, requests for drawings, incomplete sentences, and words to which one must associate (word association tests).
- The testing method is indirect. Assessors do not directly ask about the assessees' characteristics (general personality traits, needs, wishes, etc.). For this reason, assessees are unlikely to know the purposes of the test. They may know the very general purpose, for example, the test is being used for diagnosis, but the specific qualities that are being measured are assessed inexplicitly (indirectly).
- There is freedom of response. Structured personality tests (inventories) allow for "true" or "false," ratings on a scale of 1 to 5, and so on, but with projective tests, the response range is completely open. For instance, in responding to an inkblot, one person may provide one short response, "I see a wolf's head," whereas another person may say, "I see a bat," providing enormous detail about why what he sees is a bat. He may continue to say, "Also, it could be a rug . . ." Responses

to projective tests vary greatly from assessee to assessee in quality, length, and detail.

- Scoring of responses, compared to structured tests, is more complex and potentially flexible. With projective tests, assessors may interpret responses based on a variety of criteria such as psychiatric diagnoses, needs, unconscious conflicts, or unconscious defense mechanisms.

Use of projective tests in psychology and psychiatry has been controversial. These tests have been criticized for low reliability (consistency of measurement) and low validity (accuracy of measurement, meaning, whether the test measures what it is intended to measure). An article by Lilienfeld, Wood, and Garb (2001), published in the magazine *Scientific American*, describes studies and criticizes projective tests on these and other grounds. In an article in the journal *Psychological Assessment*, Meyer and Archer (2001), focusing on the Rorschach as a projective technique, respond to the types of criticisms Lilienfeld and colleagues raised. They conclude that the validity of the Rorschach is equivalent to that of the most widely used personality test (the Minnesota Multiphasic Personality Inventory) and of IQ tests. Regardless of the controversy, projective tests are still very popular. Three projective tests, the Rorschach, the Thematic Apperception Test, and the House-Person-Tree Test, are among the 10 psychological tests most frequently used by clinical psychologists (Camara, Nathan, & Puente, 2000).

Projective tests have been used in fields outside psychology, including anthropology and sociology, for research purposes. They have been used in many business areas, including advertising, management, and marketing research. In the marketing research field, they aid in establishing how people respond emotionally to products. In their book *Projective Techniques for Social Science and Business Research*, Soley and Smith (2008) discuss uses of projective tests in diverse fields.

See also Children's Apperception Test, defense mechanisms, Machover Draw-A-Person Test, psychoanalytic perspective, psychodynamic psychotherapy and psychoanalysis, Rorschach Psychodiagnostic Technique, Thematic Apperception Test, the unconscious mind.

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Prosody

Prosody is a quality of speech that helps communicate feeling or intent. *Linguistic* prosody refers to the pitch, stress, duration, and changes in frequency, intensity, and timing of speech. Linguistic prosody is thought to be primarily related to mechanisms in the left hemisphere of the brain. *Emotional* (*affective*) prosody refers to the inflection and tone in language and the use of gestures and other nonverbal signals (such as body language) to communicate emotion and feeling.

Aprosodia means lack of prosody. Aprosodia can result from lesions (wounds) in the right hemisphere of the brain, as may occur in individuals affected by right hemisphere stroke or traumatic brain injury. People with schizophrenia or autistic spectrum disorders (ASD) may have difficulty understanding the emotional prosody of others (receptive emotional aprosodia). Aprosodia may also affect individuals with Parkinson's disease.

See also aprosodia, autistic spectrum disorders, body language, facial expression, Parkinson's disease, schizophrenia, traumatic brain injury.

Prozac (Fluoxetine)

Prozac, the most common trade name for the drug fluoxetine hydrochloride, is a selective serotonin reuptake inhibitor (SSRI), an example of one of several classes of antidepressants. Fluoxetine is approved by the U.S. Food and Drug Administration (FDA) for treatment of major depression, obsessive-compulsive disorder, panic disorder, and bulimia nervosa. It is widely prescribed in the United States and other parts of the world.

The discovery of fluoxetine began in 1970, when Bryan Molloy and Robert Rathbun of Eli Lilly Laboratories began work with a compound, 3-phenoxy-3-phenylpropylamine, which is molecularly similar to an antihistamine (diphenhydramine) known to have some antidepressant effects (Wong, Bymaster, & Engleman, 1995). Molloy and Rathbun produced a drug that was a selective norepinephrine reuptake inhibitor (SNRI). Norepinephrine is a chemical messenger in the brain that sometimes malfunctions in cases of depression. Reuptake involves reabsorption of the neurotransmitter; the medication inhibits reuptake, recycling, and making more norepinephrine available for use.

David Wong of Eli Lilly worked to find a similar chemical which would operate as an SSRI because serotonin is often implicated as a neurotransmitter that malfunctions in depression. By 1972, fluoxetine was developed. Although it was not the first SSRI created and released on the market, it had fewer side effects than earlier SSRIs; two early SSRIs were withdrawn from the market because of their side effects. Eli Lilly implemented highly effective marketing, and therefore fluoxetine is often perceived as the first SSRI. Fluoxetine was [illegible] Belgium in 1986 and was approved in the United States by the FDA in 198[illegible]

Use of fluoxetine may be associated with side effects, most commonly nausea, insomnia, drowsiness, anxiety, nervousness, weight gain or loss, and tremor (Preston, O'Neal, & Talaga, 2008). Patients have reported that another side effect, akathisia (restlessness and an inability to remain motionless), caused them to feel suicidal (Rothschild & Locke, 1991). Sexual side effects may occur. Taking fluoxetine during pregnancy may increase the risk of prenatal complications and could have adverse effects on newborns (Preston et al., 2008). It is also known that fluoxetine passes into breast milk, but research is lacking into its effects on nursing infants. All potential risks should be discussed with a doctor.

Serotonin syndrome is a potentially lethal condition that results from toxic levels of serotonin in the central nervous system. Serotonin syndrome can be caused by combining antidepressants with each other or with some opioids, antimigraine medications, stimulants (e.g., amphetamines, cocaine), empathogens (e.g., MDMA or Ecstasy), some herbs (e.g., St. John's wort), and various other medications and over-the-counter products. Symptoms of serotonin syndrome may include rapid heart rate, sweating, shivering, dilated pupils, tremor or twitching, muscular rigidity, elevated temperature, confusion, agitation, delirium, hallucinations, coma, or death. Combining antidepressants and alcohol is not advisable; alcohol, a depressant, can worsen clinical depression and increase the toxicity of some SSRIs.

In 2004, the FDA announced that use of Prozac may increase the risk of suicide attempts in children. This official statement followed years of discussion regarding potential suicidality or homicidality associated with taking antidepressants such as Prozac. The FDA's statement, however, is controversial. Mental health practitioners and scientists such as psychiatrist Peter Kramer, author of *Listening to Prozac* (1997), heralded the benefits of Prozac and argued that side effects are minimal. Conversely, others, such as psychiatrist Peter Breggin—author of *The Anti-depressant Fact Book* (2001)—agree with the FDA and make even stronger claims, arguing that psychiatric medications are used much too frequently, with disastrous results. For some people, this controversy brings up questions about what it means to be a human being: are we solely biological creatures? Does the effectiveness of antidepressants and other psychoactive drugs imply that we lack free will or a soul? This controversy is likely to continue for years to come.

See also antidepressant, depression, major depressive disorder, neurotransmitter, selective serotonin reuptake inhibitor, serotonin.

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- The book *Prozac Nation (Young and Depressed in America: A Memoir)*, an autobiography by Elizabeth Wurtzel published in 1994, details the author's experience with major depression. The book was adapted into a movie of the same name.
- Several musicians and musical groups are named after Prozac, including Prozac+ (an Italian punk band), Prozak (an independent rapper from Michigan whose actual name is Steven T. Shippy), and Prozzäk (a Canadian pop band).

Psychoanalytic Perspective

In 1895, Sigmund Freud and Josef Breuer introduced a new perspective on the relationship between emotion and mental illness when they published several case studies in their classic book *Studies on Hysteria* (Breuer & Freud, 1895/1955). A conversion disorder (formerly known as hysteria) is a psychiatric condition in which the sufferer experiences physical symptoms with no known physical cause (and therefore the cause is assumed to be psychological). Symptoms can be quite dramatic, for instance, blindness, paralysis of limbs, lack of sensation in some part of the body, and even false pregnancy. In the classic case of Anna O, Freud and Breuer reported on "the talking cure," in which the patient's symptoms disappeared when she spoke about their origin. For example, under hypnosis, Anna was able to recall the origin of her arm paralysis. After telling her doctor, Breuer, about the origin, the symptom went away. According to Freud and Breuer, when the patient discusses the origin of the symptom, the retelling is accompanied by an emotional release called *catharsis*. It is because of the catharsis that the symptom disappears. Freud and Breuer had elevated emotional expression as a key to cure of psychological disturbance and argued that it was a lack of emotional expression at the time when the symptom originated, called *strangulation*, that caused the symptom in the first place.

An emotion central to psychoanalytic theory is anxiety. In one of his later writings, Freud (1936/1959) stated that anxiety was a warning sign that forbidden, unconscious impulses may seep out or break out into consciousness. In Freudian theory, people experience many impulses, often sexual or aggressive, that they repress because the impulses are socially unacceptable. For instance, an individual may have a strong hostility and murderous feelings toward his sister, and feeling these consciously would be associated with shame, guilt, and other painful emotions. Therefore the feeling

is repressed. Anxiety arises in consciousness when such impulses are likely to break through to consciousness, with the possibility of acting out those impulses in some form (not necessarily murder). In healthy functioning, such impulses are kept unconscious through psychological defense mechanisms such as denial, projection, displacement, and intellectualization. Sigmund Freud introduced such defense mechanisms, and his daughter Anna Freud elaborated on them, discussing them thoroughly in her book *The Ego and the Mechanisms of Defense* (1936).

Another emotion prominent in psychoanalytic writings is guilt (Freud, 1905/1953, 1923/1961). In Freud's famous theory of the mind—the id, ego, superego model—the superego operates according to the morality principle, acting as an "internalized parent," warning the center of the mind (the ego) that some of one's thoughts and feelings arising out of the id (which is purely pleasure centered) are immoral and unacceptable. According to Freud, guilt is at the root of some mental illness, for example, obsessive-compulsive disorder. In Freudian theory, the obsessive thoughts and compulsive behaviors of this disorder occur because an individual feels guilty about his strong impulses—usually hostile ones. The hostile impulses are not experienced consciously, but the person can achieve some satisfaction by expressing both the id and the superego impulses in the symptoms of the disorder. For example, one of Freud's patients, the Rat Man, suffered from obsessive-compulsive disorder, experiencing intrusive, obsessive images that his father and his girlfriend were devoured by rats. When these images arose, he performed compulsive behaviors (e.g., counting to 100 as quickly as possible, saying certain phrases) designed to prevent his father or girlfriend from being devoured. Freud interpreted these symptoms as symbolically representing the overwhelming ambiguous feelings—love and hate—that the Rat Man felt for both individuals. Consciously the Rat Man felt only love and repressed the strong hatred out of guilt.

Freud also wrote famously about depression (which he called *melancholia*; Freud, 1917), presenting the theory that this state may occur when an individual loses a loved one to death or abandonment. With loss, Freud said, people "internalize" the loved one, adopting his characteristics to keep a part of the person with himself. Depression is an expression of anger directed toward this internalized loved one. Freud believed that by explaining depression in this way, he was accounting for the self-punishing, reproachful qualities of depression.

Psychoanalysis was developed and modified by numerous theorists who followed Freud, and several contributed new ideas about emotion and psychoanalysis. For example, John Bowlby discussed the attachment relationship between mother and infant and how this relationship affects emotional development. Charles Brenner questioned Freud's emphasis on anxiety as the primary emotion involved in psychological conflict. Mitchell and Black (1996) have provided an historical overview of major developments in psychoanalysis since Freud's time.

Freud's theory experienced a resurgence in the 1990s, when neuroscientists acknowledged that his structural model of the mind (id, ego, superego) may accurately describe different aspects of brain function. As briefly discussed, in Freud's theory, each part of the mind has its own motivational drives, which conflict with one another. The id is pleasure seeking, the superego is motivated by morality, and the ego is centered in reality, motivated by self-preservation. Furthermore, in Freudian theory, much of

one's psychological experience is unconscious. Many neuroscientists now agree that different parts of the brain may motivate different behaviors that may conflict with one another. Additionally, they agree that some emotional processing is unconscious. Joseph LeDoux (1996) discusses these issues in his book *The Emotional Brain.*

See also ambivalence, anxiety, catharsis, defense mechanisms, Anna Freud, Sigmund Freud, guilt, obsessive-compulsive disorder, personality, psychodynamic psychotherapy and psychoanalysis, the unconscious mind.

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Psychodrama

Psychodrama was developed by Jacob L. Moreno, a Viennese psychiatrist in the 1920s. While the existing psychotherapies of the day (Freudian, Jungian, and Adlerian) focused mostly on talking between one therapist and one patient and analysis or interpretation by the therapist, psychodrama techniques involved acting out situations as well as talking about them. Psychodrama could involve individuals or groups and depended less on interpretation by the therapist than on insight gleaned from feedback and the group process (Moreno, 1948).

Psychodrama uses guided dramatic action to examine problems or explore issues. Psychodrama is used to facilitate insight, clarify issues, and enhance learning and development of new skills, personal growth, and emotional and physical well-being. Psychodrama is used in various types of therapy, including behavioral, Gestalt, family,

and affective (emotion)-oriented group therapies. As a therapeutic tool, psychodrama is a way to help clients experience the emotional qualities of an event. It provides a safe and supportive environment in which to explore new ways of behaving and interacting with others.

Psychodrama may refer to both group and individual experiences, although the term *sociodrama* is sometimes used to refer to the group experience. As a group experience, psychodrama involves spontaneous (unscripted and unrehearsed) role-plays. Group members serve as the actors, and the group facilitator (or therapist) serves as the director. Generally, one person is given the role of the protagonist (the main character); other group members are actors in the protagonist's play or serve as the audience. Audience members give feedback to the protagonist.

The classical model of psychodrama occurs in three phases: the warm-up, the action, and closure (Kipper & Hundal, 2003). During the warm-up, the protagonist is selected, the theme or issue is identified, and the stage is set. The protagonist selects other group members to play auxiliary roles. The stage is the physical space in which the psychodrama occurs. Props may be utilized during the dramatization. In the action stage, the protagonist (and auxiliaries) act out the theme or issue. The protagonist may explore new methods of resolving a problem during this phase. During closure (sharing and processing), other group members (including audience members and auxiliary actors) give feedback to the protagonist. Group members are also invited to share ways in which they felt personally connected to the protagonist's work (how the action affected them).

There are a variety of psychodrama techniques, including doubling, role reversal, and future projection. In doubling, another group member or the therapist plays the part of (and gives voice to) the protagonist's inner voice. Doubling is useful to elicit emotions, is used to offer support to the protagonist during rehearsals of new behaviors, and is used to offer more effective suggestions and interpretations of situations. In role reversal, the protagonist switches places with major figures in her life and tries to enter their shoes, offering practical and emotional insight into others' situations as well as into her own responses to other people and situations. Future projection helps identify future goals, fears, or anxiety-provoking situations; identify the steps needed to reach goals; or provide a perspective on situations (Royce-Davis, 1999).

With its focus on interpersonal action, psychodrama is a powerful vehicle for exploring relationships and resolving family problems. The family sculpture is a type of psychodrama utilized in family therapy. In the family sculpture, the therapist asks one family member to arrange the other members of the family in a tableau (arrangement). This is a way to graphically portray family members' perceptions of their roles within the family. Family therapy pioneer Virginia Satir utilized the family sculpture, often incorporating blindfolds and ropes to dramatize the roles in which family members trap each other (Nichols, 2008). Family sculpture can be used to illuminate scenes from the past to focus awareness and heighten sensitivity, either with actual family members or in a group therapy setting.

Psychodrama has been conducted in a variety of settings, including schools, hospitals, mental health clinics, detention centers, private practice, churches, and training centers. It can be performed with adults, children, adolescents, individuals with developmental disabilities, and trauma survivors. Psychodrama has been incorporated into treatment for many issues, including social skills training, substance abuse treatment,

and rehabilitation from stroke or traumatic brain injury (Royce-Davis, 1999). Research has yielded several attributes of psychodrama, including self-understanding, reenactment of family dynamics, group cohesiveness, insight, catharsis (emotional release), and the instillation of hope. Group psychodrama has been shown to be helpful in solving problems, anger control, resolution of emotional conflict, and decreasing levels of anxiety and depression (Kim, 2003).

See also anxiety, catharsis, depression, family therapy, Gestalt therapy, group therapy, traumatic brain injury.

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Psychodynamic Psychotherapy and Psychoanalysis

Psychodynamic psychotherapy has its origins in psychoanalysis, the form of psychotherapy developed by Sigmund Freud in the late 1800s and early 1900s. Psychodynamic therapy and psychoanalysis involve similar techniques and goals. However, psychoanalysis typically involves more sessions and is more intensive; the patient usually attends three to five sessions per week while undergoing psychoanalysis, whereas in psychodynamic psychotherapy, clients generally attend sessions once per week. According to Levy (2009), central tenets of psychodynamic therapy and psychoanalysis include unconscious mental functioning, defense mechanisms, a developmental perspective, and the centrality of individual and personal meaning of events.

A primary idea associated with the therapy of Freud and his followers is the importance of the unconscious mind. According to this perspective, many of our mental contents—motives, memories, wishes, even emotions—are outside conscious awareness. These unconscious mental factors, can, however, cause us great suffering and serve as impetuses for behavior. The reason that many memories, wishes, impulses, and so forth are unconscious is because of the intense negative emotions aroused by them such as fear, shame, guilt, and self-loathing. For instance, a person may have strong feelings of hostility toward a loved one, and since this feeling causes so much shame and guilt, he represses those feelings. However, according to psychodynamic and psychoanalytic theorists, unconscious factors push for expression in much the same way that all mental content does. The expression of these unconscious elements is outside the control of the conscious mind and may involve the creation of neurotic symptoms such as phobias, obsessions, depression, and so on. A primary goal of psychodynamic

psychotherapy and psychoanalysis is to bring the unconscious mind into consciousness. When an individual is more fully aware of aspects of himself, he can make conscious choices regarding which impulses or motives to express and which ones not to express. This is psychological maturity and, essentially, mental health.

Defense mechanisms are also central in psychodynamic and psychoanalytic theory. Defense mechanisms are the means through which individuals keep mental processes and content outside awareness. Defense mechanisms also usually serve as ways to express the unconscious factors. Each person tends to have favorite defense mechanisms, ones that he uses with regularity. Some examples are projection (attributing one's own qualities, often negative qualities, to someone else), denial (pretending that an event, reality, or one's own impulse does not exist), and reaction formation (behaving in a way opposite to the way one actually feels unconsciously, for instance, expressing love when one feels unconscious hatred). When bringing the unconscious mind into consciousness, theoretically, the need for defense mechanisms will decrease.

The psychodynamic and psychoanalytic perspectives take a developmental approach to personality and emphasize the importance of childhood experiences. Childhood relationships, especially with parents, are presumed to influence the dynamics present in adult relationships. This is not to say that other influences on present relationships are completely ignored, such as biological factors or current social circumstances, but rather that childhood experiences tend to be the focus.

Psychodynamic and psychoanalytic psychologists are also interested in an individual's subjective and phenomenological experience—how he experiences himself, other people, and the world in general. Other approaches in psychology, such as cognitive and phenomenological approaches, also have this emphasis. Psychodynamic and psychoanalytic psychologists differ, however, in weighting unconscious experience at least as highly as conscious experience. Additionally, in the psychodynamic and psychoanalytic approaches, emotions are emphasized over cognitions.

Given these fundamental principles and emphases, psychodynamic and psychoanalytic psychotherapists utilize specific psychotherapy techniques. One such technique is analyzing transference. *Transference* is an emotional experience that occurs in therapy for the client: the transfer of emotions from an important relationship (such as one's relationship with a parent) onto the therapist. Psychodynamic and psychoanalytic therapists interpret the transference to help the client reach the goal of bringing the unconscious mind into consciousness. For instance, a client may transfer strong feelings of both love and hatred that he had for his father onto the therapist. The hatred in particular may be largely unconscious. By transferring the feelings onto the therapist (i.e., the client feels that he hates the therapist), he is continuing to deny his hatred of his father but is making movements toward recognizing and eventually accepting this painful feeling, beginning with the recognition that he is capable of having such a strong feeling at all (although it is initially directed toward a different object, or person). Transference is a type of *catharsis*, or emotional release, which psychodynamic therapists believe helps the client to become well. Psychodynamic therapy involves many other techniques, including *free association*, in which the client says whatever comes to mind without censorship; *clarification*, in which the therapist makes sure that she understands what the client is saying by restating it to the client; and *confrontation*, in which the therapist, at appropriate times, gently points out inconsistencies in the client's behaviors and thoughts or values.

Blagys and Hilsenroth (2000) conducted a literature review of empirical studies that compared psychodynamic psychotherapy to cognitive-behavioral therapy in regard to psychotherapy process and technique. On the basis of the review, they identified core characteristics of both types of therapy. They concluded that psychodynamic psychotherapy has seven specific characteristics: (1) emphasis on emotion and emotional expression; (2) a probing of efforts to avoid or deny experience; (3) recognition of patterns of behavior, perception, and experience; (4) focus on past experience; (5) emphasis on interpersonal relationships; (6) importance of the therapy relationship; and (7) discussion of wishes, dreams, and fantasies.

Levy (2009) reviews research on the effectiveness of psychodynamic psychotherapy for a variety of psychiatric conditions. He concludes that one or more variants of psychodynamic therapy are helpful for depression, anxiety, personality disorders, and eating disorders. Particular types of psychodynamic psychotherapy are also helpful for borderline personality disorder.

See also ambivalence, catharsis, defense mechanisms, Anna Freud, Sigmund Freud, human development, motivation, psychoanalytic perspective, transference, the unconscious mind.

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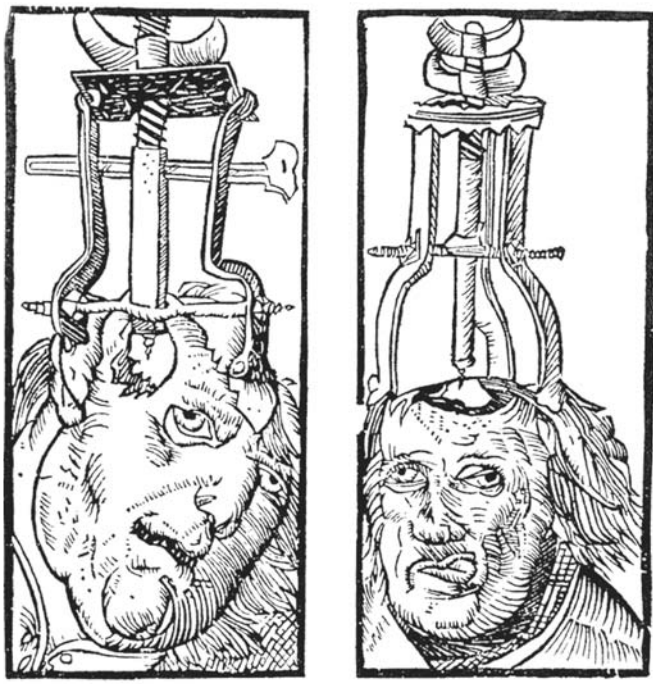
Many Woody Allen films depict the conflict, torment, and pain of neurotic suffering, or the experience of psychoanalysis. Woody Allen's film *The Purple Rose of Cairo* is considered an allegory for the psychoanalytic experience. A female character in the film is having two different relationships with the same man at the same time. This type of relationship parallels the psychoanalytic experience in the sense that a patient relates to the psychoanalyst both as a transference figure from the past and as a helpful professional in the present (Silvio, 1994).

Psychosurgery

Psychosurgery is a type of neurosurgery (brain surgery) used to alleviate mental distress. It has also been referred to as *psychiatric neurosurgery* and *limbic system surgery*. Trephination (or *trepanning*, now referred to as *craniotomy*), an ancient form of psychosurgery, involved drilling or sawing holes in the skull. A trephined skull has been found at Eisisheim, France; carbon dating places it in the Neolithic period (about 5100 BC). Literature describing trephination for relief of psychotic and affective (mood) symptoms dates back to 1500 BC (Mashour, Walker, & Martuza, 2005).

In the modern era, the unusual accident in 1848 of Phineas P. Gage, a railroad worker in Vermont, lent some insight into the links between the brain and behavior. Gage survived an explosion that drove a railroad spike through his skull. While his language and cognitive functions were apparently intact, his personality and social reasoning were affected (Damasio, 1994). Swiss psychiatrist Gottlieb Burckhardt is considered the founder of modern psychosurgery. Burckhardt's 1888 *topectomy* involved excising (cutting) multiple points in the frontal, parietal, and temporal cortices of the brain. The topectomy resulted in some successes and some failures (including fatalities); it was not well received in Switzerland (Mashour et al., 2005). In the 1930s,



1525 engraving of trephination by Peter Treveris (taken from Hieronymus Braunschweig's *Buch der Cirurgia Hantwirckung der Wundartzny*, 1497. Trephination (or trepanning, now referred to as craniotomy), an ancient form of psychosurgery, involved drilling or sawing holes in the skull. Literature describing trephination for relief of psychotic and affective (mood) symptoms dates back to 1500 BC. (National Library of Medicine)

American physiologists John F. Fulton and Carlyle Jacobsen found that creating lesions (wounds) in part of the frontal lobes of chimpanzees (Becky and Lucy) produced behavioral changes. After the surgery, Becky no longer became agitated. However, Lucy (who had previously been docile) became violent (Weiss, Rauch, & Price, 2006). Fulton and Jacobsen presented their findings at the 1935 Second World Congress of Neurology.

Portuguese neurologist and dean of medicine at the University of Lisbon Egas Moniz was intrigued by these findings. Moniz and neurosurgeon Almeida Lima began testing the prefrontal leucotomy on patients with psychoses. Moniz coined the term *psychosurgery.* In 1936 (after Moniz's initial reports), American neurologist Walter Freeman and American neurosurgeon James Watts started performing the treatment in the United States, which they modified and renamed *prefrontal lobotomy.* Their first 200 cases were deemed successful, although adverse effects such as seizures and apathy were noted (Freeman & Watts, 1942). Freeman, enthusiastic about the procedure and seeking ways to make it more efficient, devised a method to avoid drilling through the skull, using a tool similar to an ice pick to break through the orbital bone and sever the nearby prefrontal cortex. Watts broke off relations with Freeman when he learned that Freeman was performing ice-pick lobotomies in his private office, using electroconvulsive therapy (shock treatments) as the only form of anesthesia (Weiss et al., 2006). However, the prefrontal lobotomy became increasingly popular and was often performed by practitioners who were neither surgeons nor physicians (Mashour et al., 2005). In the early part of the 20th century, somatic (biological) therapies for mental illness included convulsive therapy, insulin shock therapy, hydrotherapy (water therapy), and psychosurgery. The prefrontal lobotomy was embraced in part because of overcrowded asylums, the costs and burden of mental illness on society, media reports of positive outcomes from prefrontal lobotomy, and a lack of effective alternative treatments. The 1949 Nobel Prize in Physiology or Medicine, awarded to Egas Moniz for his work in psychosurgery, lent validation to the procedure (Mashour et al., 2005). The lobotomy started to fall out of favor after reports of lobotomies being performed in unsterile conditions by unqualified practitioners. Scientific and medical reports questioned the efficacy of the lobotomy and brought to light serious side effects, including seizures, infections, apathy, decreased attention span, personality change, and death (Mashour et al., 2005). Use of the lobotomy declined after the introduction of the antipsychotic medication chlorpromazine (Thorazine) in the 1950s, and with the increasing popularity of psychoanalysis. Prefrontal lobotomy became illegal in some countries and states (Mashour et al., 2005).

Controversy about psychosurgery was sparked again in the 1970s with the publication of Mark and Ervin's *Violence and the Brain*, which suggested that neurosurgical procedures could treat aberrant limbic system function responsible for much of the violent behavior afflicting society. The landmark case *Kaimowitz vs. Department of Mental Health* (1973), in which a prisoner was offered a psychosurgical procedure to temper his aggressive behavior, spurred ethical debate about government use of neurosurgery as a tool of suppression and control. This resulted in guidelines about ethical use and regulation of psychosurgery (Mashour et al., 2005).

Psychosurgical techniques became more accurate (reducing side effects) with the development of stereotactic devices in the 1940s. The sterotactic frame allows the neurosurgeon to create lesions in precise target areas. Adverse outcomes have been

reduced using surgical techniques guided by modern imaging techniques such as magnetic resonance imaging (MRI) or computed tomography (CT) scans. Modern psychosurgery includes anterior cingulotomy, subcaudate tractotomy, limbic leucotomy, and anterior capsulotomy. Psychosurgery may be used to treat psychiatric disorders such as severe, chronic treatment-resistant obsessive-compulsive disorder (OCD) or severe mood disorders such as major depressive disorder (MDD) or bipolar disorder. The anterior cingulate is an important circuit in the frontal lobe of the brain. Anterior cingulotomy, first performed in the 1950s, has been shown to be effective in 25 to 30 percent of OCD patients treated and 53 to 57 percent of patients with affective disorders (MDD or bipolar disorder). The most common adverse effects of cingulotomy are seizures, urinary difficulties, and mild cognitive impairments. While many patients have demonstrated overall cognitive improvements after the procedure, some have shown deficits in attention and visual processing (Weiss et al., 2006). Subcaudate tractotomy, designed by Knight in London in 1964, creates lesions that interrupt fibers going from the frontal lobes to subcortical structures such as the amygdala. Subcaudate tractotomy has been shown to be effective in about 34 percent of patients treated for MDD or OCD. Side effects occur at a higher rate with subcaudate tractotomy than with anterior cingulotomy. Adverse effects include seizures and personality changes (Weiss et al., 2006). Limbic leucotomy is a combination of the lesions created in anterior cingulotomy and subcaudate tractotomy. It has been shown to be effective in treating 36 to 50 percent of patients with OCD or MDD (Weiss et al., 2006). Limbic leucotomy has been effective in treating some patients with severe OCD accompanied by self-mutilating behaviors (Mashour et al., 2005). Anterior capsulotomy, developed by French neurosurgeon Talairach in the late 1940s, has demonstrated greater effectiveness (about 70%) in treating severe OCD than anterior cingulotomy. However, anterior capsulotomy also has greater potential for adverse effects, including confusion, weight gain, depression, nocturnal incontinence, cognitive and affective (mood) changes, and decreased initiative (Mashour et al., 2005).

Psychosurgery is usually a treatment of last resort, when treatments such as psychotherapy and medications have failed (Glannon, 2006). Psychosurgery is not usually considered an effective intervention for individuals with schizophrenia, personality disorders, or substance abuse disorders (including alcoholism). Rarely, individuals with severe violent outbursts, with the potential for injury to themselves or others, may be considered for psychosurgery involving the amygdala, thalamus, or hypothalamus (Cosgrove & Rauch, 2005).

Electroconvulsive therapy is a nonsurgical alternative to psychosurgery. Transcranial magnetic stimulation and vagal nerve stimulation are being explored as nonsurgical alternative treatments for depression. Deep brain stimulation—implanting a stimulating probe at targeted brain sites—is being explored as a means to increase efficacy and reduce adverse outcomes of psychosurgery. Some consider endoscopic sympathetic block—a surgical intervention involving cauterizing or clamping ganglions (nerve bundles) on the sympathetic nerve trunk as a treatment for social phobia—to be a type of psychosurgery.

See also anterior cingulate cortex, bipolar disorder, electroconvulsive therapy, endoscopic sympathetic block, Phineas P. Gage, major depressive disorder, Egas Moniz, mood disorder, obsessive-compulsive disorder, prefrontal cortex, prefrontal lobotomy.

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Some people advocate self-trepanation (drilling holes in their own skulls) for health reasons or to achieve a higher state of consciousness. *Eccentric Lives and Peculiar Notions* (Michell, 1999) describes a British group that promotes self-trepanation to purportedly allow the brain access to more space and oxygen. In 2000, two men were prosecuted in Utah for practicing medicine without a license when they trepanned a British woman in an attempt to treat her depression and chronic fatigue syndrome (Costandi, 2008; Reporters Committee for Freedom of the Press, 2000). An ABC news reporter who witnessed and videotaped the home brain surgery was ordered to turn over the videotapes and testify in court.

R

Rational Emotive Behavior Therapy

Rational emotive behavior therapy (REBT) was developed by Albert Ellis in 1955 to highlight the power of reframing one's irrational beliefs into more rational perspectives. Ellis provided an alternative to the then-prevalent model of cause of emotional disturbance, which was viewed as a disease with a genesis outside of the self such as a biological agent or traumatic childhood experience. Ellis believed this model was incomplete and argued that the source of many emotional problems is often what one tells oneself. He emphasized that people have many choices in how they perceive events and do not have to be batted around by circumstances; many aspects of our lives, and the ways we feel about our lives, are self-created. Furthermore, people do not necessarily need an outside force (such as a therapist or a medication) to cure themselves. Rather, people can become better by retraining themselves, by changing the way they think.

People often say things to themselves that are self-defeating. In cases of disappointment, individuals may react with extreme self-statements such as "I never get what I want" or "I am always rejected by people." Ellis states that if we examine these statements, we realize that they are untrue and that alternative statements are both more accurate and help one to feel better. "I never get what I want" may be changed to "I sometimes don't get what I want." "I am always rejected by people" may be changed to "Lately, I have been rejected by some people." Training in REBT involves learning to recognize whether a belief is more rational or more irrational. Irrational beliefs tend to emphasize polar extremes, are characterized by black-and-white thinking (without recognizing shades of gray), overgeneralize to other situations, and are rooted in a desire for perfection. As Ellis states, "The road to hell . . . is paved with unrealistic expectations!" (Ellis & Harper, 1975, p. 4). Rational beliefs are more tentative and conditional, acknowledge gray areas in life, and recognize that perfection is not possible.

REBT can be practiced in both individual and group therapy contexts. Techniques include disputing irrational beliefs, social skills training, and reinforcement for successfully applying REBT. The therapy includes homework assignments that may involve the preceding techniques and others such as risk-taking and rational-emotive

imagery (e.g., vividly imagining having a rational reaction to a "horrible" event). A favorable aspect of REBT is that it can also be done as self-help. However, Ellis states that since one's self-defeating patterns tend to develop over long periods of time and may be difficult to recognize or identify, many people would benefit from applying these techniques under the supervision of a therapist. REBT therapy is widely used today. It and other forms of cognitive therapy are among the most successful treatments for clinical depression, some anxiety problems, and other disorders.

See also ABC model of emotional reaction, cognitive therapy and cognitive-behavioral therapy, Albert Ellis.

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Recovery International

Recovery International (formerly Recovery Inc.) is a mental health self-help organization that uses cognitive-behavioral self-help techniques to help people lead more peaceful and productive lives. It especially intends to prevent relapses in people with a history of psychiatric problems. Recovery International was founded at the Neuropsychiatric Institute of the University of Illinois Research and Education Hospitals in 1937 by neuropsychiatrist Abraham A. Low. It is one of the earliest organizations to use cognitive techniques for changing behavior and problematic emotions such as irrational fears, excessive anger, and depression. The development of the organization was based on Low's theories of will-training, temper control, and symptom analysis. In the book *Mental Health through Will-Training*, Low (1950) gave details about techniques for managing fear, anger, and the symptoms of depression, which are now referred to as behavior modification and cognitive therapy. In opposition to the prevailing psychoanalytic (Freudian) theory, Low believed that mental disease has biological causes and that people's behavior is driven by willpower, namely, people's ability to control their behavior through their own will and determination. Accordingly, Recovery Inc. has focused on the self-control aspect of managing mental illnesses.

Low observed that a structured organization and therapeutic group setting are needed to provide support to former psychiatric patients. As the organization became independent, Recovery Inc. expanded outside of Illinois and later overseas, while it turned completely into a self-help organization, in which instruction and training similar to cognitive or behavioral therapy are given to the patient to help herself. Recognized by the American Psychiatric Association for its contribution to the field of psychiatric rehabilitation, Recovery Inc. won the Arnold L. van Amerigen Award in Psychiatric Rehabilitation in 2000.

In 2008, Recovery Inc. announced its merger with the Abraham Low Institute and changed its name to Recovery International/The Abraham Low Institute (RI/TALI), headquartered in Chicago. As a self-help organization, RI/TALI holds hundreds of support group meetings in the United States, Canada, Ireland, Puerto Rico, Spain, Israel, and the United Kingdom. Recovery International's support group meetings offer training in their self-help methods. Other types of self-help methods

are to assist people in changing their behaviors and attitudes in response to disturbing thoughts, impulses, and symptoms accompanied by such mental problems as depression, stress, anger, anxiety, obsessive-compulsive disorder, bipolar disorder (formerly called manic depression), schizophrenia, posttraumatic stress disorder, and suicidal thoughts. At the meetings, members talk about a specific situation in which they had psychological or emotional symptoms. They also share their thoughts before the symptom, how they recognized their symptoms, and how they reacted to their symptoms. In return, other members suggest different ways of looking at the situation and better ways to manage their symptoms. Through the support meetings, members seek and obtain the help of fellow members and learn effective ways to practice the self-help methods. For the long run, members are expected to develop skills in taking control of damaging thoughts and behaviors.

To help students in grades 6 through 12 manage anger and increase self-control, RI/TALI has developed the Power to Change program, which uses Dr. Low's tools and techniques. Since its introduction in Chicago public schools in 2005, more than 700 students have benefited from the program (Weller, 2008).

See also cognitive therapy and cognitive-behavioral therapy.

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Regulation of Emotion

An emotion unfolds over a short period of time in reaction to a stimulus or event (either external or internal) and involves a number of components: physiological, experiential (feeling), cognitive (thinking), and behavioral, which includes an expressive component. Given the complexity of an emotion, there is much that can be regulated (modulated), and the regulation can occur in a variety of ways; that is, emotion regulation can involve changing the strength or duration of the emotion, or the expressive components (facial expression, gestures, etc.), physiological response, behavioral response, or other aspects of the emotion.

For example, an individual could go to work, walk into the office of her boss, and be told that she is being laid off. In this instance, she will likely react (internally) with a variety of emotions, including anger and fear. Hopefully (if she wants a higher probability of finding another job), she will engage in some regulation of her emotions. In general, it may be acceptable to express some disappointment, a little sadness, or some surprise, but a very strong reaction of anger or fear (smashing things, having a panic attack) will serve her less well. So although she may, in the moment, internally be experiencing strong anger and fear, she will hopefully regulate at least the expressive component of the emotion. A few days later, after she thinks again about having lost her job, the emotions of anger and fear may arise again. At this point, it would serve her well to modulate more aspects of her emotion—physiological response, cognitive, experiential (feeling)—so that she may focus on engaging in some action that will increase her probability of getting a job (sitting down and

working on her résumé, calling people for references, getting out of the house and applying for jobs, etc.).

Although the preceding example demonstrates functional behavior, emotion regulation need not be functional; it merely involves attempts at modulating emotions. Additionally, emotion regulation need not be conscious; it could be unconscious. In the preceding example, for instance, the individual may, in the few days after losing her job, consciously suppress her anxiety, but later, her anxiety becomes suppressed in an automatic and unconscious fashion. As Gross and Thompson (2007) point out, emotion regulation may even occur before an emotion occurs in that people can select situations (e.g., approach or avoid them) in such a way as to affect their emotions. They can also attempt to behaviorally modify a situation once they are in it, for instance, if the woman looking for a job goes to a job interview and sees that all people in the waiting room are dressed much more professionally than she is, she can choose to leave the situation before the job interview occurs. Or if she chooses to be interviewed, she can use various strategies to regulate emotions that may arise while being interviewed such as manipulating her attention toward or away from the well-dressed competitors, modifying the way she thinks about the fact that others are well dressed, and/or attempting to modulate her physiological or expressive responses to the anxiety she feels (e.g., maintaining a relaxed facial expression despite her anxiety).

Other concepts in the emotion field and related fields bear some similarity to or overlap with emotion regulation (Gross & Thompson, 2007). A related concept is coping. One way coping differs from emotion regulation is that coping tends to apply to longer periods of time; that is, coping often refers to a process that can take place over weeks, months, or years such as coping with a cancer diagnosis. Second, coping generally focuses on decreasing negative emotions and affects, whereas emotion regulation may involve increasing or decreasing either positive or negative emotions. Defenses are similar to emotion regulation also, except that defenses are most often automatic and unconscious and are typically viewed as stable characteristics, akin to personality traits (Cramer, 2000).

Emotion regulation can take a different form in children than it does in adults. Central to the adult-child distinction is the issue of whether emotion regulation has to involve *intrinsic* processes (an individual regulates her own emotions) or whether it can also involve *extrinsic* processes (one person's emotions are regulated by another person such as an adult regulating a child's emotions). Emotion experts Gross and Thompson (2007) state that emotion regulation can occur both intrinsically and extrinsically. Although research on adults has generally revealed intrinsic regulation and research on children has often focused on extrinsic regulation, both children and adults may regulate their emotions (or have their emotions regulated) in either way. Family environment and parental modeling influence how children learn to regulate their emotions (Charles & Carstensen, 2006; Sheffield Morris, Silk, Steinberg, Myers, & Robinson, 2007). A feature of some mental health disorders (e.g., mood disorders, traumatic brain injury) is difficulty with emotional regulation.

See also defense mechanisms, family, human development, human life span.

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Relationships

A relationship is an association or connection between two or more people. It may be brief or long term and may be based on kinship, affinity (e.g., love or liking), business, or social commitment. There are many types of interpersonal relationships, including family (e.g., parents, siblings, children), romantic or intimate (e.g., marriage), roommates, employer-employee, student-teacher, social, friends, and acquaintances. People in relationships influence each other, sharing thoughts, feelings, and rituals. Interdependence in relationships is shaped by individual experience and temperament, family background, culture, gender, and role expectations. For example, one man's ideas about roles (e.g., husband and father, wife and mother) will influence his behaviors, feelings, and expectations within a relationship with his spouse and children. While primarily individualistic societies (as in the United States) may focus on independence and individual autonomy, many cultures (e.g., some Asian and Hispanic cultures) are more collectivist, stressing interdependence of family members and responsibility to the family. Lack of understanding about culture may lead to inappropriate judgments about dynamics within a family (or other relationships) being overly dependent.

Many theories about interpersonal relationships cite the importance of early childhood experiences, including behaviors and dynamics modeled within one's family of origin. British psychiatrist John Bowlby proposed that attachment—the early bond between a baby and its primary caregiver (parents and others who care for the baby)—sets the stage for future emotional relationships, especially intimate relationships (Fraley & Shaver, 2000). People raised in families with patterns of detrimental behavioral interactions may repeat these behaviors in future relationships.

People may experience negative emotions when a relationship is threatened by interpersonal conflict. Emotions enable humans to respond to basic challenges in living in several ways: emotions produce adaptive physiological changes, the experience of emotion guides behavior, and emotional expression facilitates social communication and interaction. Psychologist Keith Sanford of Baylor University (Waco, Texas) has researched emotions and interpersonal conflict (2007). Emotions can be classified as selfish or pro-social. *Selfish* emotions, which focus on self-preservation, conflict, competition, and fighting, appear to be associated with activation of the right hemisphere of the brain and the amygdala (a brain structure associated with emotion, especially fear). In contrast, *pro-social* emotions, which focus on interpersonal relationships, cooperation, and attachment, appear to be associated with the left hemisphere of the brain (Sanford, 2007). Negative emotions have been described as "hard" (e.g., selfish emotions such as feeling angry or aggravated) or "soft" (e.g., pro-social emotions such as feeling sad or hurt). Hard selfish emotions are associated

with exerting power and control, while soft (pro-social) emotions are associated with experiencing or expressing vulnerability. The type of negative emotion expressed during conflict may predict communication and conflict resolution in the relationship. Hard emotions (e.g., anger) may signal a potential attack, putting the recipient of the anger on the defensive. Expression of hard emotions may be destructive to a relationship. The expression of soft emotion (e.g., sadness) may indicate a need for social support, elicit helping or comforting behaviors, or facilitate resolution of conflict. A study examining hard and soft emotion expression during conflict in different types of relationships (peers and married couples) found that the expression of hard emotions was predictive of increased negative communication, decreased positive communication, and less relationship satisfaction (Sanford, 2007).

Emotional expression in intimate (romantic) relationships changes across the life span of the relationship and is influenced by cultural display rules. *Display rules*, learned by an individual within the context of culture and family, dictate appropriate ways to express emotions. When the relationship is new, it may be considered more appropriate to express mostly positive emotions and emotions that produce harmony. As a relationship evolves toward increasing intimacy, it may be considered more acceptable to express intense or negative emotions. This may explain why some people put more effort into controlling or suppressing the expression of negative emotions early on in a romantic relationship (Strzyzewski Aune, Aune, & Buller, 1994).

Features of some mental health disorders include difficulties with interpersonal dynamics. Individuals with borderline personality disorder often experience a fear of abandonment. They have very unstable (*roller coaster*) interpersonal relationships, often alternating between extremes of expressing positive and negative emotions toward (and about) others. Individuals with schizoid personality disorder tend to be aloof and are uninterested in and unresponsive to interpersonal relationships.

See also attachment, borderline personality disorder, culture, display rules, family, family therapy, gender and emotions, interpersonal psychotherapy, intimacy, loneliness, loss, personality disorder, social support, transference, trust.

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Relief

Relief is a type of pleasure that arises following the cessation of an aversive stimulus or in the event that an unpleasant stimulus is expected but does not occur. Scholars disagree regarding at least one aspect of relief. Schopenhauer (1994) argued that relief is simply a temporary decrease in unhappiness. However, Frijda (2001)

contends that it is often more than that; joy often follows relief, expressed as smiling, sighing, laughter, and in other ways.

One type of relief that follows the termination of something unpleasant is bodily relief pleasures, as identified by Kubovy (1999). They include sneezing, spitting, coughing, belching, orgasm, urination, defecation, and passing gas. Relief following the ending of something unpleasant has also been studied in other species such as rats. Over many decades, behaviorists (psychologists who study behavior only, without considering inner processes such as thought and emotions) investigated reinforcement in the form of cessation of electric shock. If an animal is subjected to a shock and must perform a behavior for the shock to cease, the behavior it performs is reinforced by the termination of the shock. Reinforcement means that in the future, the animal is likely to repeat that behavior that produced the termination of shock since it led to agreeable consequences. Often, the purpose of these studies was to learn more about the nature of reinforcement, but researchers at the same time observed relief in the animals, and some studies produced the added benefit of increasing our understanding of relief as an emotion. In a study specifically designed to investigate relief in rats, researchers found that after an unpleasant stimulus ceases, rats produce a vocalization that is apparently a sigh (Soltysik & Jelen, 2005).

Relief that involves a comparison between what *has* happened (something good) and what *could have* happened (something bad) engages higher-order thinking and has been studied in humans. For instance, Kray and Gelfand (2009) studied relief that occurs in salary negotiations with a new employer. People experienced relief when their offer was accepted. In particular, Kray and Gelfand (2009) found that women experienced more relief when their first offer was accepted than did men, which they interpreted as being related to the higher social cost that women face from negotiating salaries—that women are more concerned than men that salary negotiation will harm relationships with people in the workplace.

See also positive emotions.

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Revised Children's Manifest Anxiety Scale

The Revised Children's Manifest Anxiety Scale: Second Edition (RCMAS-2) is a self-report scale that measures the level and nature of anxiety as experienced by children using a simple yes-or-no response format. It is designed for children and youth aged 6 to 19 years. Published by Western Psychological Services, it was created in 2008 by Cecil R. Reynolds and Bert O. Richmond. An individual's responses

are compared to those of similarly aged children or teens in a sample of more than 2,300 children and teens. The RCMAS-2 consists of 49 items that look at several dimensions, including physiological anxiety, worry, social anxiety, and defensiveness. It also yields an overall anxiety score. It looks at issues such as stress, test anxiety, school avoidance, peer and family conflicts, and drug use. The RCMAS-2 can be completed in 10 to 15 minutes; a short form is available with only 10 items. Items are written at a second-grade reading level. The RCMAS-2 is available in English and Spanish.

See also anxiety, Beck Anxiety Inventory, Depression Anxiety and Stress Scales, generalized anxiety disorder, panic disorder, phobia, State-Trait Anxiety Inventory.

Further Reading:
Western Psychological Services Web site: http://portal.wpspublish.com/

Right Hemisphere Syndrome

In right-handed individuals, the *right* hemisphere of the brain (RH) is usually associated with prosody (controlling the emotional tone of speech), understanding facial expressions, sustaining attention, and visual-spatial control; the *left* hemisphere is usually associated with language and motor control. In addition, the RH controls motor functions and perceptions on the left side of the body, while the left hemisphere controls them on the opposite side. Stroke, brain trauma (e.g., traumatic brain injury), or disease (e.g., brain tumor) that damages regions of the RH may result in a condition called right hemisphere syndrome (RHS). Symptoms of RHS may include attention difficulties, visual-perception and motor problems, cognitive or emotional impairment, and alterations of body perception. Motor and visual-spatial perception difficulties may include problems with topographic memory (memory of familiar surroundings), dressing and constructional apraxia (inability to perform coordinated movements), motor impersistence (inability to sustain purposeful movement), prospopagnosia (inability to recognize faces), and poor comprehension of facial expression. Communication and perceptual difficulties may result in aprosodia (inability to control the emotional tone of speech) or amusia (loss of musical ability). Cognitive and emotional difficulties may include anosognosia (lack of awareness that one is sick or has a disability), confusion, apathy, flattened expression or affect (displaying little emotion), reduplication (belief that two versions of a person or place exist simultaneously), impaired judgment or decision making, or socially inappropriate behavior. RHS can result in misidentification of people, including the delusion that someone has a double (a doppelgänger); this is known as Capgras syndrome. RHS may cause significant problems on the left side of the body, including hemiplegia (paralysis) and hemispatial neglect (lack of attention or awareness of one side of the body). Congenital or developmental RHS in children is characterized by difficulties with attention, slow performance (processing) speed, emotional and interpersonal difficulties, visual-spatial problems, and nonverbal learning disabilities (especially difficulty with math).

Anosognosia is a condition in which an individual is unaware that he has been affected by illness or disability (e.g., when paralyzed following a stroke). The term anosognosia, from the Greek (*a*, [illegible]*noso*, "disease"; *gnosia*, "knowledge"), was first described in 1914 by French neurologist Joseph [illegible] François Félix Babinski

(Heilman, Barrett, & Adair, 1998). Anosognosia is accompanied by a lack of concern about one's condition, with little or no display of emotion (Damasio, 1994). If an individual is unaware that there is something wrong, he may delay in seeking medical care, which could seriously impact outcomes (prognosis) or impede rehabilitation efforts. Anosognosia can be accompanied by an inability to make appropriate personal or social decisions, socially inappropriate behavior, or dangerous behavior. While some researchers have posited that anosognosia is a psychological defense mechanism (i.e., denial or repression), clinical evidence suggests that anosognosia is a cognitive result of neurological impairment (Damasio, 1994; Heilman et al., 1998). Anosognosia is caused by damage to the right somatosensory cerebral cortices, which are responsible for external and internal senses and perception of the body (body image), and to the white matter in the right hemisphere, which transmits signals between various body regions and the motor and prefrontal cortices (Damasio, 1994). Disruptions of body perception and awareness (body image or schema) combined with left-side paralysis or neglect may result in *somatoparaphrenia*, in which an individual does not believe that one of his body parts (or an entire side of his body) belongs to him. For example, an individual with RHS may believe that his paralyzed left arm belongs to the therapist who is working with him or that it belongs to his son (who is in another location).

When typical symptoms of RHS are observed in a right-handed individual with damage in the left hemisphere of the brain, this is known as crossed right hemisphere syndrome (Marchetti, Carey, & Della Sala, 2005). Genetic, hormonal, or developmental factors may lead to atypical patterns of brain lateralization (functions in different brain regions or hemispheres than the majority of the population). Aphasia (loss of language abilities) usually occurs with strokes affecting the left hemisphere. In crossed aphasia, damage to the right hemisphere (in a right-handed person) causes aphasia. Early cases of crossed aphasia were noted by Farge (1877) and Bramwell (1899; Marchetti et al., 2005). Data from crossed aphasia and crossed RHS indicate that rules of cerebral dominance are not always the case; that is, there is not always strict division (lateralization) of brain functions (e.g., language in one hemisphere, visual spatial in the other). Reports of exceptions, such as in crossed RHS, help neuroscientists learn more about how the brain functions.

RHS is diagnosed by clinical examination, neuropsychological testing, and imaging studies, most often functional magnetic resonance imaging (fMRI) or computed tomography (CT) scans. Other types of imaging, such as SPECT (single photon emission computed tomography), PET (positron emission tomography), or DTI (diffusion tensor imaging), may yield useful information about blood flow or neuron activity in specific brain regions. Treatments for RHS may include speech and language therapy, physical therapy, occupational therapy, cognitive rehabilitation, and psychotherapy.

See also aprosodia, Cotard's syndrome, diffusion tensor imaging, functional magnetic resonance imaging, Phineas P. Gage, positron emission tomography, prefrontal cortex, prosody, psychosurgery, traumatic brain injury.

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National Institute of Neurological Disorders and Stroke. Web site: http://www.ninds.nih.gov/disorders/stroke/stroke.htm

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Notable cases of anosognosia after right hemisphere stroke include U.S. President Woodrow Wilson (in 1919) and Supreme Court justice William O. Douglas (in 1975). In addition to left-side paralysis, President Wilson showed signs of hemineglect—he ignored or was unaware of people and things positioned to his left. (His aides made sure all his guests were ushered in on the president's right side.) He denied any physical effects from the stroke and even sought reelection to a third term after his second stroke (Robertson & Halligan, 1999). Supreme Court Justice Douglas not only denied any physical effects of his stroke (he was paralyzed on the left) but he attributed his hospitalization to a fall, checked himself out of the hospital against medical advice, told reporters that he was kicking 40-yard field goals, and invited them to go hiking with him. He failed to observe social conventions, another symptom of his right-hemisphere syndrome. Although he was unable to perform his job, he refused to resign (Damasio, 1994).

Road Rage

Motor vehicle accidents (MVAs) are the number one cause of accidental death and injury in the United States (National Vital Statistics System, 2009). A primary factor contributing to MVAs is aggressive driving or *road rage*. Aggressive driving involves verbal and gestural aggression (e.g., yelling and cursing at other drivers, honking, and making obscene gestures), vehicular aggression (e.g., tailgating and blocking other drivers), and extreme forms of aggression (e.g., assault such as throwing objects, punching, or shooting other drivers).

Prevalence of aggressive driving has been studied in both general populations and among individuals in court-approved programs for traffic violators. Among the general public, research indicates that in a one-year period, between 7 and 34 percent of U.S. drivers report at least one instance of verbal or gestural driving aggression, between 16 and 28 percent report at least one example of vehicular aggression, and fewer than 1 percent report extreme vehicular aggression (Miller, Azrael, Hemenway, & Solop, 2002; Wells-Parker et al., 2002). Among individuals who enroll in programs for traffic violators, aggressive driving is much more frequent; for instance, 31 percent of these drivers reported chasing other vehicles with their car at some point in their lifetimes (Novaco, 1991), [illegible] than 1 percent in the general population state that they engage in this behavior over their lifetimes.

A number of studies have confirmed that aggressive driving is associated with MVAs (for a review, see Galovski, Malta, & Blanchard, 2006). Aggressive driving is also correlated with assaults and other violent crimes and thus is a social problem worthy of study and a target for interventive treatments (Galovski et al., 2006).

Aggressive driving has multiple causes. Personal characteristics contribute to aggressive driving. For instance, individuals diagnosed with attention-deficit hyperactivity disorder (ADHD) are at higher risk (e.g., see Barkley, Guevremont, Anastopoulos, DuPaul, & Shelton, 1993). ADHD involves inattention, hyperactivity, and impulsivity. Additionally, individuals who do not have ADHD but are high in impulsiveness (low in self-control) are more likely to engage in aggressive driving. Social factors such as cultural norms and traffic congestion are also related to aggressive driving (Galovski et al., 2006).

Galovski, Malta, and Blanchard (2006) recommend a cognitive-behavioral approach to treatment. At the Albany Center for Stress and Anxiety Disorders, Galovski and Blanchard (2004) developed a program with the following components: education about the harmfulness of aggressive driving and of anger in general, teaching the aggressive driver to acknowledge that he is an aggressive driver, relaxation training, development of new coping techniques, and training in alternative (less angry) ways to view events. This treatment regimen is similar to anger management programs in general, such as have been created by Novaco (1975). Additionally, some self-help resources exist, for instance, the American Automobile Association (AAA) Foundation for Traffic Safety describes anger management tips on its Web site, and self-help manuals are available.

Aggressive driving is a dangerous problem that is likely to persist in the United States. Research on origins and treatment is relatively recent and is likely to advance in coming years.

See also aggression, anger, anger management, postal.

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- A Canadian study found that about half of 1,395 adult survey respondents (46.6%) in Ontario, Canada, were shouted at, cursed at, or had rude gestures directed at them in the past year, and 7.2 percent were threatened with personal injury or car damage. Studies have found that road rage is more common among men and younger drivers. It is more common for drivers who often drive on busy roads and those who drive high-performance cars to perpetrate road rage (Smart, Mann, & Stoduto, 2003).
- Wells-Parker et al. (2002) conducted a survey of 1,382 adult drivers in the United States and found that 30 percent complained about other drivers; 17 percent had yelled at other drivers; 3 percent had chased other drivers or prevented others from passing; and 1 to 2 percent had gotten out of their cars to hurt or argue with other drivers, had deliberately hit other cars, or had carried a weapon.
- In Arizona, 34 percent of 790 drivers surveyed had made obscene gestures or cursed angrily, and 28 percent had aggressively followed or blocked other vehicles. About 11 percent carried guns in their cars; hostile behavior while driving was much more common among drivers who had guns (Miller, Azrael, Hemenway, & Solop, 2002).

Carl Rogers (1902–1987)

Carl Ransom Rogers was born in Oak Park, Illinois, a suburb of Chicago. He had five siblings, an engineer as a father, and a housewife mother. Both parents were deeply religious Protestants and hard workers. Rogers reported that his parents were kind and loving, but strict. They disapproved of drinking, smoking, dancing, playing cards, movies, and any demonstrations of sexual interest. Although Rogers's childhood was pleasant, his social life was limited.

He attended college at the University of Wisconsin, initially majoring in agriculture. In his junior year he was selected as one of 10 U.S. students to go to China, representing the World Student Christian Federation Conference. While in China, he began to doubt some of the literal teachings of the Bible. Around the same time, he fell in love with a young woman from his hometown, and they became engaged. He graduated with a degree in religion, married fiancée Helen Elliot, and enrolled in Union Theological Seminary in New York City.

In seminary, he developed further religious doubts and began to take courses at Columbia University, where he eventually earned a PhD in psychotherapy. While

still a graduate student at Columbia, he took a job working as a psychologist in the Child Study Department of the Society for Prevention of Cruelty to Children in Rochester, New York. It was there, working with underprivileged and "delinquent" children for 12 years, that he developed much of his philosophy of psychotherapy.

Rogers had two children and a happy family life. He held academic jobs at Ohio State University, the University of Chicago, and the University of Wisconsin. At Wisconsin he became disenchanted with academia and in 1964 began working at the Western Behavioral Studies Institute in La Jolla, California. He continued in research positions into his eighties. Throughout his career he maintained an active psychotherapy practice. He wrote several books, including the classics *Client-Centered Therapy* (1951), *On Becoming a Person* (1961), and *A Way of Being* (1980). His honors include the American Psychological Association presidency in 1946, awards from the American Psychological Association, and a nomination for the Nobel Peace Prize in 1987. He died of a heart attack in 1987.

Rogers's primary contribution was his approach to psychotherapy, "the new psychotherapy" called *client-centered therapy*, which he also argued was an approach to life. Rogers, one of the founders of the humanist movement, contended that humans and other organisms naturally seek to "grow" and "actualize." This natural actualizing tendency will emerge as long as the individual is in an environment that provides the correct context—a relationship with another person who is warm, empathic, and genuine. Another focus of Rogers's therapy is that it is experiential and feeling oriented. Both client and therapist are to focus on the client's current experience, emotional and otherwise. Rogers presented a true alternative to the approaches to psychotherapy that existed in the 1950s, many of which still strongly resembled Freudian approaches. Rogers's humanism bears some similarity to a modern movement in psychology: positive psychology.

See also client-centered therapy, experiential therapy, humanistic psychotherapy, Abraham Maslow, positive psychology.

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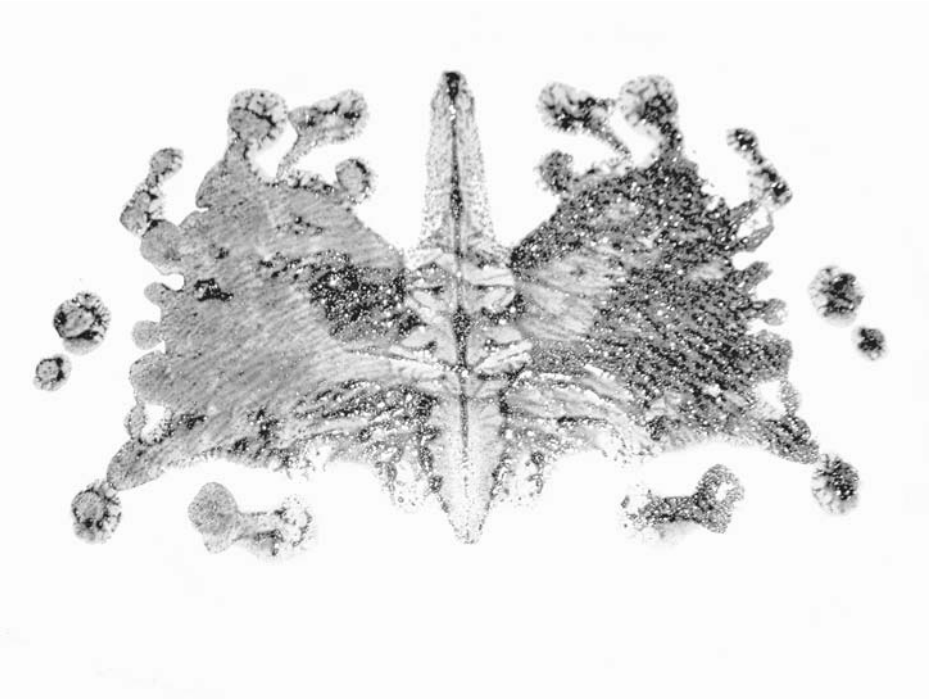
Rorschach Psychodiagnostic Technique

The Rorschach Psychodiagnostic Technique, also known as the Rorschach Inkblot Test or simply as the Rorschach, is the best known of the projective personality tests. A projective personality test is one in which people are presented with ambiguous, unstructured stimuli or situations and are asked to respond in some way, for example, by telling a story, completing a sentence, or drawing a picture. Projective

tests are presumed to assess a variety of psychological attributes, including general personality traits, unconscious conflicts, needs, general adjustment level, and psychiatric conditions.

The Rorschach has a long and colorful history. It was developed by Swiss psychiatrist and psychoanalyst Hermann Rorschach. He published the test and an accompanying manuscript in 1921. The Rorschach was initially introduced in Europe and was poorly received, although a small and loyal following developed. Rorschach died suddenly of peritonitis in 1923 at age 38. He had not yet published most of his recommendations for scoring the test, and it appeared the Rorschach might fade into obscurity.

The test received a second life in America, when Bruno Klopfer, a German Jewish psychologist, left Germany as the Nazis rose to power there in the 1930s. He was hired as a researcher at Columbia University and began teaching a course on the Rorschach. Klopfer, who was a charismatic man, developed a sort of guru status and helped to create the mystique of the Rorschach. Other champions of the Rorschach followed Klopfer, including American psychologist Samuel Beck. By the 1950s and 1960s, the Rorschach was widely used by clinical psychologists. During this time, more dissertations and articles were written about the Rorschach than about any other clinical test.



An imitation of a Rorschach inkblot. Developed by Swiss psychiatrist and psychoanalyst Hermann Rorschach, the Rorschach test is one of the most widely used psychological tests by clinical psychologists. (morgueFile.com)

The Rorschach consists of 10 cards on which symmetrical inkblots are printed. Five are black, gray, and white; the remaining five include color. During test administration, the assessor, who is usually sitting next to or across from the assessee, presents the first inkblot to the assessee, with an instruction such as, "Tell me what you see. There are no right or wrong answers. Just tell me what it looks like to you." The assessor writes down everything that the assessee says verbatim and may make note of other behaviors such as whether and how the assessee turns the card, length of time to respond, evidence of nervousness (e.g., foot shaking), and so on. Cards are presented one at a time to the assessee, with the same instructions.

Since Rorschach did not complete a scoring system before his death, others took on the task. Bruno Klopfer and Samuel Beck, both mentioned earlier, developed separate and competitive scoring guidelines, and each had his own group of followers who adhered to the leader's system. Klopfer took a more impressionistic, artistic approach to scoring, and Beck strove to create scoring principles based in empirical science. The two men were passionate rivals who eventually no longer spoke to one another, and therefore a unified scoring system was not created for many years. In fact, three additional groups of people broke off from either man, and three additional scoring approaches arose.

In the 1970s, American psychologist John Exner, who was Beck's student and who admired both men, developed the Comprehensive System, which attempted to integrate the five competing ones, with an emphasis in the empirical science approach. The Comprehensive System greatly improved interrater reliability among people administering the test. This means different assessors are more likely to interpret test results in the same way. The Comprehensive System is now the standard system for interpreting the Rorschach (Exner, 2002). Many agree that Exner's efforts paid off, and he was awarded the prestigious Award for Distinguished Professional Contribution by the American Psychological Association in 1998. Exner's scoring system is complex, with scorers interpreting over 100 characteristics. These characteristics include whether the assessee mentions movement, responds to color, tends to see blots holistically or in parts, whether responses focus on the colored parts of blots or the white spaces, and themes in the responses (e.g., people, animals, food, clothing, clouds, blood, etc.).

Despite the success of Exner's system and improved interrater reliability, use of the Rorschach is controversial. Several reviews have questioned its validity (e.g., Lilienfield, Wood, & Garb, 2000, 2001). Critics claim that the Rorschach is not helpful for diagnosis in general, with a few exceptions (e.g., to identify schizophrenia and other psychotic or thought disorders). In general, critics say, the Rorschach tends to overpathologize. In other words, the Rorschach tends to interpret many more responses as abnormal or indicative of a mental illness than would be expected in the general population. A particular area in which the Rorschach has been criticized is in legal proceedings (see Paul, 2004). It is regularly used in both criminal and civil cases where psychological evaluations are required (e.g., insanity pleas, child custody cases, claims regarding sexual abuse). Meyer and Archer (2001) have disputed these criticisms, arguing that the Rorschach is as valid as any other commonly used psychological test, including IQ tests and the Minnesota Multiphasic Personality Inventory (the personality test that is most commonly used by clinical psychologists).

The Rorschach is one of the most widely used psychological tests by clinical psychologists, ranking fourth in a poll from the year 2000 (Camara, Nathan, & Puente, 2000). Its use will likely remain controversial. Regardless of its future, the Rorschach has a prominent place in the history of psychology.

See also defense mechanisms, projective tests, psychoanalytic perspective, the unconscious mind.

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- The Rorschach inkblot test was first known as Klecksography, named for the game Swiss children would play with inkblots (Wolf-Fédida, 2006).
- Douglas M. Kelley conducted a Rorschach study of the Nazis, published in his book *22 Cells in Nuremberg: A psychiatrist examines the Nazi criminals*.

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (SES) was developed by Morris Rosenberg in 1965 to measure global self-esteem. Originally written to assess adolescents, it is now used with both adolescents and adults in both general and clinical populations. According to Hogan and Rengert (2008), the SES has maintained popularity over the years; it is a widely used measure in counseling research, ranking second of all tests used in research in four leading counseling journals that were surveyed from 2002 to 2005.

The SES is a brief (10 item) questionnaire that can be completed in a few minutes. A strength of the SES is that it has been used in research in a wide variety of populations, including the elderly (Classen, Velozo, & Mann, 2007), Canadian high school students (Bagley, Bolitho, & Bertrand, 1997), crack cocaine drug users (Wang, Siegal, Falck, & Carlson, 2001), and individuals with hearing loss (Crowe, 2002). It has been translated into many different languages, including German, Spanish, French, Japanese, Portuguese, American Sign Language, and Estonian. It is available on the Internet for self-assessment.

Self-esteem—a general feeling of self-worth and self-acceptance—is an important general mental health and well-being concept. It is relevant to both clinical and nonclinical populations. Improving self-esteem can be a helpful aspect of treating mental illnesses.

See also self-esteem.

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S

Sadness

Sadness is an emotional reaction to a perceived loss, lasting anywhere from a few seconds to several hours. The sad individual may have suffered the death of a loved one, lost a relationship, a job, or a home, or received a low score on an exam. Whether a loss will lead to sadness is a matter of individual interpretation and experience. Scherer's (1997) cross-cultural study of emotions produced results that led to a better understanding of sadness. When research participants were asked to describe circumstances under which they felt sadness, participants mentioned that the situations were unpleasant, they conflicted with personal goals, and the losses that occurred were perceived as irrevocable. Thus sadness is associated with some level of hopelessness.

Sadness is related to other experiences, such as depression and grief, with sadness being the less complicated reaction. Depression includes sadness but also a variety of other symptoms and is longer-lasting than sadness. Grief, like sadness, is a reaction to loss but is longer lasting and includes both sadness and other emotions.

Many emotional reactions, such as fear and sexual desire, are clearly functional, leading to self-protective or self-promoting behaviors such as escape from danger or mating. Sadness is also presumed to have one or more purposes, although researchers have not agreed on what these may be. One theory is that sadness, which is associated with low activity level and social withdrawal, allows for self-reflection in the aftermath of loss of an object or person of central importance to the self (Lazarus, 1991). This reflective period allows the individual to change her plans and goals in a way that integrates the loss (e.g., Bonanno & Keltner, 1997). A second theory is that sad behavior (facial expression, posture of sadness, etc.) evokes empathy in others and encourages others to provide help (e.g., Keltner & Kring, 1998). Therefore an individual becomes sad when he needs assistance, and the signs of sadness may elicit help from others. Bonanno, Goorin, and Coifman (2008) describe other theories of the function of sadness.

Sadness has reliable physiological components. Perhaps counterintuitive, sadness is associated with activation of the sympathetic nervous system, which involves the stress response. For example, with sadness, heart and respiration rates increase (Levenson, Ekman, & Friesen, 1990) and cortisol (a stress hormone) is released (Buss et al., 2003). Additionally, release of beta endorphin (a body's natural pain killer) is

decreased when an individual experiences sadness (e.g., Zubieta et al., 2003). Although ordinary people may feel that they know much about this everyday emotion, it is one of the emotions about which we have the least scientific knowledge.

See also basic emotions, crying, depression, dysphoria, grief, loss, negative emotions, sympathetic nervous system.

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San Francisco Bay Area Center for Cognitive Therapy

Founded in 1995, the San Francisco Bay Area Center for Cognitive Therapy (the Center) provides care to people to enhance the quality of their lives. Located in the Rockridge district of North Oakland, it is led by a group of six clinical psychologists who specialize in cognitive-behavioral therapy (CBT). They are committed to providing high-quality CBT, conducting CBT research and training, and disseminating information about CBT to professionals and the public. The Center provides individual and couples therapy for adults, adolescents, and children. They provide treatment for a variety of issues including mood disorders, anxiety, substance abuse, impulse control, sexual dysfunction, eating disorders, and personality disorders.

According to the Center's Web site, CBT is a practical, present-focused approach to treatment in which therapists help people improve functioning by teaching people skills to manage the thoughts (cognitions) and behaviors that contribute to their problems. CBT is based on empirical evidence and is goal oriented, practical and concrete, active (the therapist serves as teacher and coach), and collaborative (patient and therapist work together as a team).

At an initial consultation, patient and therapist discuss presenting issues and explore whether CBT is an appropriate treatment. When the patient is a child or adolescent, the parents or primary caretakers meet with therapists for the initial consultation. Since psychologists at the Center cannot prescribe medications, referrals can be made to local psychiatrists.

Setting concrete goals is an important process in the early stages of the therapy. Treatment goals may focus on reducing unpleasant symptoms (e.g., depression, anxiety, panic attacks, substance abuse), improving functioning (e.g., ability to function

at work, increased work satisfaction, reduced fights with spouse). The therapist may help the patient identify any distorted beliefs contributing to distress and obstacles preventing the patient from taking actions that might accelerate progress. By suggesting new ways to look at the situation, the therapist can teach the patient better ways to handle situations. The patient practices newly learned skills in therapy and as homework; the therapist plays a role as coach. Together, patient and therapist monitor the patient's progress.

The Center's Web site lists publications authored by Center psychologists. It also has a list of resources, including referrals to other treatment professionals, self-help books, a list of current research studies and clinical trials, and professional resources.

See also cognitive therapy and cognitive-behavioral therapy.

Further Reading:

San Francisco Bay Area Center for Cognitive Therapy Web site: http://www.sfbacct.com/.

Satisfaction

Satisfaction is one of a number of positive emotions or affective states. The term *satisfaction* comes from the Latin *facere* (to do or make) and *satis* (enough). True to the meanings of the root words, feeling satisfaction means that one has judged or assessed that a situation is adequate; the situation or circumstance meets some standard or expectation that one has established. In psychology, a type of satisfaction that is frequently considered and studied is overall life satisfaction.

Evaluating one's satisfaction involves making a comparison. A number of researchers have discussed the types of comparisons that an individual makes to determine her satisfaction level. Sirgy et al. (1995) identified several, including comparing what one has to what

- one deserves
- others have
- one has had in the past
- is ideal
- is minimally tolerable
- one has predicted for oneself
- one would expect given one's evaluation of one's personal strengths and weaknesses

An individual may make one comparison or a number of comparisons to evaluate satisfaction in any particular circumstance.

Since satisfaction is relative, it often does not correspond directly to objective conditions. For example, people who are poor often report higher life satisfaction than some people who are rich. Olson and Schober (1993) have dubbed this phenomenon the *satisfaction paradox*.

An affective concept that is similar to satisfaction is happiness. Some scholars argue that the two concepts are identical (e.g., Veenhoven, 1984). However, others have made some distinctions. According to some researchers (e.g., Campbell, Converse, & Rodgers, 1976), satisfaction and happiness are the two primary components of well-being. Satisfaction is the more cognitive (thinking) component, and happiness is the feeling component. According to Schumm (1999), happiness is more often related to

the quality of one's interpersonal relationships than is satisfaction. Supporting these theoretical ideas that satisfaction and happiness are distinct, some researchers have found that the same individuals may report high levels of one and low levels of the other. For instance, Adams (1997) found that between 1980 and 1992, African Americans reported that their level of satisfaction increased while their overall happiness decreased.

As Michalos (1980) discussed, satisfaction may occur in two ways. An individual has either achieved one's aspirations, through meeting some absolute standard, doing better than others, doing better than one has done in the past, and so on, or one has lowered or given up on one's aspirations, becoming resigned (in which case aspirations match achievements because the aspirations have now been lowered). With achievement, one is both satisfied and happy with the situation. With resignation, one is satisfied—there is no gap between aspiration and achievement—but is not happy with the circumstance.

See also happiness, positive emotions, positive psychology, Satisfaction with Life Scale.

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Satisfaction with Life Scale

The Satisfaction with Life Scale (SWLS) was developed by American psychologist Ed Diener and colleagues (Diener, Emmons, Larson, & Griffin, 1985) as a measure of overall life satisfaction. The SWLS is one of relatively few assessment tools of positive emotional states; the majority of assessment tools measuring emotion focus on negative emotional states. The SWLS is one of the most widely used measures of life satisfaction or general well-being and is primarily utilized in research (rather than as a clinical or diagnostic test).

The SWLS consists of only five items that the assessee (person taking the test) rates on a scale from 1 (strongly disagree) to 7 (strongly agree). Examples of items are "In most ways, my life is close to ideal" and "If I could live my life over, I would change almost nothing." Completing the SWLS takes one to two minutes.

A number of research questions can be addressed through use of the SWLS. In addition to measuring general life satisfaction, it can also be used to measure stability or changes in life satisfaction over time. Another potential topic of study is the relationship between people's objective circumstances (e.g., socioeconomic status, level of education, age) and one's general life satisfaction. Researchers have also utilized the SWLS to assess life satisfaction in specific populations such as the elderly (Richeson & Thorson, 2002), people suffering from traumatic injury (Corrigan, Bogner, Mysiw, Clinchot, & Fugate, 2001), and university students (Paolini, Yanez, & Kelly, 2006). With the increasing popularity of the positive psychology movement in psychology, this measure is likely to continue to be widely used.

See also positive emotions, positive psychology, satisfaction.

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Schizoaffective Disorder

Schizoaffective disorder has elements of both schizophrenia and a mood (affective) disorder. It is generally considered to be a form of schizophrenia, lying on the *schizophrenia spectrum*. There are two subtypes of schizoaffective disorder: the depressive subtype is characterized by major depressive episodes, while the bipolar subtype is characterized by manic episodes with or without depressive symptoms.

Schizoaffective disorder presents with symptoms of a major mood disorder (manic, depressive, or mixed) concurrent with symptoms of schizophrenia. Mood symptoms are prominent throughout the course of the illness, except for minimum two-week period during which there are positive psychotic symptoms (hallucinations or delusions) without prominent mood symptoms. It can be difficult to distinguish schizoaffective disorder from schizophrenia and from bipolar disorder.

Characteristic symptoms of schizoaffective disorder generally fall into four categories: positive symptoms, negative symptoms, symptoms of mania, and depression:

- *Positive symptoms* are the *presence* of thoughts, perceptions, and behaviors that are usually absent in people without schizoaffective disorder. These include hallucinations (seeing and hearing things that are not there), delusions (false beliefs), and thought disturbances (e.g., jumping from topic to topic, making up new words, speech that does not make sense).
- *Negative symptoms* are an *absence* of behaviors, thoughts, or perceptions that would normally be present in people without schizoaffective disorder. These include blunted affect (lack of expression), apathy, anhedonia (inability to experience pleasure), poverty of speech (not saying much), and inattention. Residual and

negative symptoms are usually less severe and less chronic with schizoaffective disorder than those seen in schizophrenia.

- *Symptoms of mania* involve an *excess* of behavior, activity, or mood. These may include euphoric or expansive mood, irritability, inflated self-esteem or grandiosity, decreased need for sleep, rapid or pressured speech, racing thoughts, distractibility, increased goal-directed activity (a great deal of time spent pursuing specific goals, at work, school, or sexually), and excessive involvement in pleasurable activities with high potential for negative consequences (e.g., increased substance use, spending sprees, sexual indiscretions, risky business ventures).
- *Depressive symptoms* involve a *deficit* of activity and mood. Symptoms include depressed mood, sadness, diminished interest or pleasure (anhedonia), changes in appetite or sleeping patterns, decreased activity level, fatigue, loss of energy, feelings of worthlessness, inappropriate guilt, decreased concentration, inability to make decisions, and preoccupation with thoughts of death.

Schizoaffective disorder usually starts in late adolescence or early adulthood, most often between the ages of 16 and 30. Because it is difficult to differentiate schizoaffective disorder from schizophrenia and bipolar disorder, detailed information on the prevalence and demographics of schizoaffective disorder is lacking. Estimates suggest that there is a higher incidence of schizoaffective disorder in women than in men. The bipolar subtype of schizoaffective disorder is more common in young adults, while the depressive subtype is more common in older adults (American Psychiatric Association, 2000). The disorder lasts a lifetime, although symptoms and functioning can improve with time and treatment. Symptom severity also varies over time, sometimes requiring hospitalization. The cause of schizoaffective disorder is not known, although current theories suggest that an imbalance of the neurotransmitter dopamine (a chemical messenger) is at the root of both schizophrenia and schizoaffective disorder.

Features associated with schizoaffective disorder include poor occupational functioning, a restricted range of social contact, difficulties with self-care, increased risk of suicide, increased risk for later developing episodes of pure mood disorder, schizophrenia, or schizophreniform disorder (similar to schizophrenia). Schizoaffective disorder is also associated with alcohol and other substance-related disorders (resulting from attempts to self-medicate). Anosognosia (i.e., poor insight that one is ill) is also common in schizoaffective disorder, but the deficits in insight may be less severe and pervasive than in schizophrenia.

A combination of medication and psychosocial interventions is generally used to treat schizoaffective disorder. Medications include antipsychotics, mood stabilizers, and antidepressants. The effectiveness of psychosocial interventions has been researched less for schizoaffective disorder than for schizophrenia or mood disorders. However, the evidence suggests that beneficial treatments include cognitive-behavioral therapy, social skills training, vocational rehabilitation, family therapy, and case management.

The bipolar subtype of schizoaffective disorder has a better prognosis than the depressive subtype. Everyone responds to treatment differently. While a brief period of treatment can provide effective relief with return to normal functioning for one person, another person may require ongoing long-term treatment.

See also anhedonia, antidepressant, antimanic, antipsychotic, bipolar disorder, cognitive therapy and cognitive-behavioral therapy, depression, family therapy, mood disorder, mood stabilizer, schizophrenia.

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Schizoaffective disorder is one of the more common, chronic, and disabling mental illnesses. Although its exact prevalence is not clear, it may range from 2 to 5 in 1,000 people (0.2% to 0.5%). Schizoaffective disorder may account for one-quarter to one-third of all people diagnosed with schizophrenia (National Alliance on Mental Illness, 2003).

Schizophrenia

Schizophrenia is a mental disorder characterized by abnormal perceptions and expressions of reality. It is marked by positive and negative symptoms. Positive symptoms indicate the *presence* of behaviors, perceptions, or thoughts that people without schizophrenia do not exhibit or experience. These may include hallucinations (hearing or seeing things that are not there), delusions (fixed or bizarre beliefs not necessarily grounded in reality), disorganized speech, and disorganized or catatonic behavior. Negative symptoms indicate the *absence* of behaviors or thoughts experienced or exhibited by individuals without the disorder. These may include flat affect (lack of emotional expression or reactivity), alogia (poverty of speech), and avolition (lack of drive or motivation). Schizophrenia also causes significant social, interpersonal, and occupational (vocational and/or academic) dysfunction.

In 1896, German psychiatrist Emil Kraepelin grouped together paranoid psychosis, hebephrenia (now known as *disorganized type schizophrenia*), and catatonia into a single entity known as *dementia praecox* (which literally means "early dementia"). Swiss psychiatrist Paul Eugen Bleuler changed the name to schizophrenia in 1908. The word *schizophrenia* comes from the Greek roots *schiz* (to split) and *phren* (soul, spirit, or mind). Bleuler believed that the splitting of different psychological functions results in a loss of unity of the personality (Fusar-Poli & Politi, 2008). In the current version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*, American

Rosemary Kennedy (depicted in this 1938 family photograph) was born with mild mental retardation; she developed schizophrenia at the age of 21. After undergoing a lobotomy, she lived most of her life in an institution. From left to right: Bobby, Eunice, Jean, Patricia, Rosemary, and Teddy. (AP/Wide World Photos)

Psychiatric Association, 2000), there are five schizophrenia subtypes: catatonic, disorganized, paranoid, undifferentiated, and residual. Individuals presenting with schizophrenia rarely fall entirely into one subtype; a diagnosis is assigned based on the most prominent symptoms. An individual with schizophrenia may be diagnosed with different subtypes at different points in time. To be diagnosed with schizophrenia, symptoms must have been present for a continuous period of time: at least six months according to the *DSM-IV-TR*, and one month according to the *International Statistical Classification of Diseases and Related Health Problems* (*ICD-10*; World Health Organization, 1990). The *DSM-IV-TR* is a classification system for mental health disorders used more often in the United States; the *ICD-10* is used more often in Europe and the United Kingdom (Stirling, 1999).

The course of schizophrenia falls into phases. The *prodromal* phase is a period of deteriorating function and symptoms including a general loss of interest, avoidance of social interactions, avoidance of work or study, irritability, oversensitivity, odd beliefs (e.g., superstitions), and odd behaviors (e.g., talking to oneself in public). The *acute* (or active) phase is characterized by positive psychotic symptoms (i.e., hallucinations, delusions, disordered thoughts, bizarre behavior) and functional deterioration. In the *recovery* phase, active psychosis begins to remit; there may be some ongoing psychotic symptoms as well as confusion, disorganization, or dysphoria. The *residual* phase is characterized by negative symptoms such as lack of motivation, apathy, social

withdrawal, and flat affect with continued (but less severe) impairment. If symptoms persist and do not respond to medication, some individuals remain chronically impaired. There may be overlap between phases. Some phases respond better to different treatments.

It is important to distinguish between schizophrenia and other disorders, for example, bipolar disorder, schizoaffective disorder, personality disorders, other psychotic disorders, or psychosis caused by general medical conditions or substance use. While schizophrenia has some affective (mood-related) symptoms, affective features are less prominent than in bipolar or schizoaffective disorders. Schizotypal, schizoid, paranoid, and borderline personality disorders can be mistaken for schizophrenia. Other psychotic disorders include delusional disorders (e.g., Cotard's or Capgras syndrome), brief psychotic disorder, and shared psychotic disorder (folie à deux). Physiological conditions that can cause symptoms similar to schizophrenia include brain tumors, viral encephalitis, temporal lobe epilepsy, cerebral syphilis, multiple sclerosis, Huntington's disease, and AIDS. Head injury (especially if it damages the left temporal lobe) may cause schizophrenia-like symptoms (Torrey, 2006). Substance-induced psychosis can be caused by drugs of abuse (e.g., amphetamines, psychedelics, PCP) and by some medications; it is usually transient (it passes), whereas schizophrenia does not. An individual's culture must be taken into account when considering a diagnosis of schizophrenia. Individuals who participate in certain religious or spiritual rituals, or belong to a culture with a history of shamanism, may speak in tongues, report hallucinations or visions, or behave in an excited or seemingly irrational manner. If linguistic and cultural differences exist, mental health practitioners should be cautious when interpreting speech as disorganized or behavior as bizarre, and be sensitive to cultural differences in eye contact, emotional expression, and body language. There is some evidence of overdiagnosis of schizophrenia in African Americans and Asian Americans by American clinicians (American Psychiatric Association, 2000).

Schizophrenia has a relatively narrow age of onset. In the United States, 75 percent of individuals who develop schizophrenia do so between 17 and 25 years of age. It can occur in childhood (rarely before age five) or later in life. Schizophrenia tends to affect more men than women (Torrey, 2006). Individuals with better prognoses (positive outcomes and response to treatment) tend to have sudden (rather than gradual) onset, later (adult) onset, be women, have no relatives with a history of schizophrenia, or have predominantly positive (rather than negative) symptoms. Individuals with schizophrenia have a lower life expectancy; this is thought to be related to increased accidents, disease, unhealthy lifestyles (including smoking and substance abuse), inadequate medical care, and homelessness (Torrey, 2006). There is a higher rate of unemployment and suicide among individuals with schizophrenia.

Obsolete theories for causes of schizophrenia include bad mothering, masturbation, demons, parenting styles, poor family relationships, early childhood trauma, and attachment difficulties. Schizophrenia was attributed to "bad cultures" by Margaret Mead in the 1930s; Christopher Lasch revisited this concept in 1979 with his idea that schizophrenia is the characteristic expression of a narcissistic society, and Ronald Laing (in the 1960s) promoted the idea that schizophrenia was a sane response to an insane world. Thomas Szasz purported that schizophrenia and other mental disorders do not actually exist; they are simply semantic artifacts (Torry, 2006). Other theories that have been discredited (but continue to be explored) include the idea that

schizophrenia is caused by vitamin deficiencies or food allergies. It is now understood that causes of schizophrenia relate to genetics (it runs in families), neurochemistry, brain structure, neurology, immunology, prenatal factors, and environment. There is an increased incidence of schizophrenia with prenatal exposure to flu, famine, obstetric complications, and central nervous system infection in early childhood (American Psychiatric Association, 2000). The major neurotransmitters (chemical messengers in the brain) implicated in schizophrenia include dopamine, serotonin, norepinephrine, glutamate, and GABA (gamma-aminobutyric acid); (Torrey, 2006). Neuroimaging studies have consistently found enlargement of the lateral ventricles (part of the telencephelon of the brain). Schizophrenia affects a range of neuropsychological abilities, including memory, psychomotor abilities (e.g., coordination), attention, perception, and reaction time. This accounts for much of the disordered thinking and functional impairment experienced by individuals with schizophrenia. Schizophrenia may be associated with aprosodia, or a difficulty in appropriately transmitting and interpreting language-based and nonverbal cues (e.g., tone of voice, body language). It may be accompanied by anhedonia (manifested by a loss of interest or pleasure), dysphoric mood (e.g., depression), anxiety, anger, sleep disturbance, lack of interest in food or eating, abnormal psychomotor activity (e.g., pacing, rocking, grimacing, posturing), odd mannerisms, and ritualistic or stereotyped behavior. Schizophrenia often co-occurs with obsessive-compulsive disorder, panic disorder, and phobias.

Before antipsychotics were developed in the 1950s, treatment for psychosis consisted of shock therapy (e.g., electroconvulsive shock and induced insulin coma), barbiturates, psychosurgery (e.g., prefrontal lobotomy), physical restraint, and institutionalization (Patterson, 2006). Current effective treatment of schizophrenia starts with a thorough diagnostic work-up and combines several treatment modalities. Treatments may include antipsychotic and other medications, family therapy (including psychoeducation), individual supportive therapy (e.g., psychoeducation, cognitive-behavioral therapy), social skills and vocational training, hospitalization (if necessary), and case management (coordination of services and communication between treatment providers). Some practitioners advocate the use of electroconvulsive therapy for the treatment of schizophrenia (Torrey, 2006). Alternatives to antipsychotics such as glycine, vitamin B_3 (niacin), *Rauwolfia serpentina*, and betel nut (*Areca catechu*) have yielded inconclusive results (Javitt et al., 2001; Sullivan, Andres, Otto, Miles, & Kydd, 2007; Werneke, Turner, & Priebe, 2006). More research is needed to determine the safety and effectiveness of these approaches for treating schizophrenia.

See also anhedonia, antipsychotics, anxiety, aprosodia, bipolar disorder, cognitive therapy and cognitive-behavioral therapy, complementary and alternative medicine, Cotard's syndrome, culture-related specific syndromes, depression, dysphoria, electroconvulsive therapy, family therapy, neurotransmitter, obsessive-compulsive disorder, phobia, prefrontal lobotomy, psychosurgery, schizoaffective disorder, serotonin, traumatic brain injury.

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- Rosemary Kennedy (sister of John, Robert, and Edward Kennedy) was born with mild mental retardation; she developed schizophrenia at the age of 21. Because antipsychotic medications did not exist in 1941, Rosemary was given a lobotomy. This caused severe mental retardation and brain damage. She was confined to a private nursing home until her death in 2005, at the age of 86.
- The 2001 film *A Beautiful Mind* depicted the life of Nobel Prize winner John Forbes Nash as he developed paranoid schizophrenia.
- Approximately 2.4 million American adults, or about 1.1 percent of the population aged 18 and older in a given year, have schizophrenia. Schizophrenia often first appears in men in their late teens or early twenties. In contrast, women are generally affected in their twenties or early thirties (National Institute of Mental Health, 2009).

Seasonal Affective Disorder

Seasonal affective disorder (SAD) is a type of depressive disorder characterized by episodes of depression at certain times of the year. SAD should not be confused with SADS (sudden arrhythmia death syndrome), a genetic heart condition that can cause

sudden death in apparently healthy young people. SAD diagnoses are usually made by qualified health professionals using criteria from the *Diagnostic and Statistical Manual of Mental Disorder* (*DSM-IV-TR*; American Psychiatric Association, 2000). Most episodes begin in fall or winter and remit (go away) in the spring. According to the *DSM-IV-TR*, SAD involves a pattern of seasonal onset of at least two depressive episodes with remissions, and no nonseasonal depressive episodes, that have occurred during the past two years. Also, seasonal depressive episodes must outnumber nonseasonal episodes over the person's lifetime. With SAD, seasonal depression cannot be better explained by psychosocial stressors such as unemployment during the winter months or a seasonal school schedule (American Psychiatric Association, 2000). SAD can range from mild dysphoria (feeling unwell or unhappy) to severe depression. In addition to sadness or depressed mood, SAD symptoms include lack of energy, hypersomnia (sleeping a lot), overeating, weight gain, and carbohydrate cravings. Major depressive disorder or bipolar episodes (usually bipolar II) may be seasonal in nature. There are high rates of SAD among adults with attention-deficit hyperactivity disorder (ADHD; Rybak, McNeely, Mackenzie, Jain, & Levitan, 2007). If an individual has seasonal bipolar disorder, full-spectrum light therapy (phototherapy) may cause switching to manic or hypomanic episodes.

SAD occurs more frequently in women and at higher latitudes (closer to the North Pole). Winter depressive episodes occur more in younger people. SAD is also seen in individuals who work at night or do shift work, and in areas with significant cloud cover or pollution that blocks out sunlight (Preston, O'Neal, & Talaga, 2008). SAD is thought to occur by lack of exposure to bright light, and because of deficits of the neurotransmitter (chemical messenger) serotonin.

Effective treatments include full-spectrum intensive light therapy (phototherapy) and medications. Light therapy involves exposure to light of a specified intensity and type for a prescribed duration (dosage), often at a specific time of day. Since the serotonin system is thought to be involved, antidepressant medications prescribed are usually selective serotonin reuptake inhibitors (SSRIs, e.g., Prozac) or monoamine oxidase inhibitors (e.g., Marplan, Nardil; Preston et al., 2008). Melatonin (N-acetyl-5-methoxytryptamine, a hormone extracted from the pineal gland) has been tried as an alternative (complementary) treatment for SAD but has not been found to be effective in relieving depressive symptoms (Putilov & Danilenko, 2005).

See also bipolar disorder, depression, dysphoria, light therapy, major depressive disorder, monoamine oxidase inhibitor, neurotransmitter, selective serotonin reuptake inhibitor, serotonin.

Further Reading:

National Alliance on Mental Illness Web site: http://www.nami.org/.

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Selective Serotonin Reuptake Inhibitor

Selective serotonin reuptake inhibitors (SSRIs) are used to treat clinical depression, obsessive-compulsive disorder, generalized anxiety disorder, social anxiety disorder, and posttraumatic stress disorder. Some SSRIs are also used to suppress cocaine cravings. SSRIs include alaproclate, citalopram (Celexa, Cirpam, Cirpamil, Elopram), escitalopram (Lexapro), etoperidone (Etonin), fluoxetine (Prozac, Sarafem), fluvoxamine (Luvox), paroxetine (Paxil, Pexeva), sertraline (Zoloft), and zimelidine (Normud, Zel).

The first generation of antidepressants included monoamine oxidase inhibitors (MAOIs), introduced in the 1950s, and tricyclics (TCAs) and tetracyclics, introduced in the 1960s. SSRIs are known as second-generation antidepressants and were first introduced in the 1980s (Patterson, 2006; Wong, Bymaster, & Engleman, 1995). Fluoxetine (Prozac) was one of the first SSRIs developed; it was developed at Lilly Laboratories in 1972. Although it was not the first SSRI created and released on the market, it had fewer side effects than earlier SSRIs; two early SSRIs were withdrawn from the market because of their side effects. Eli Lilly implemented highly effective marketing, therefore fluoxetine is often perceived as the first SSRI. Prozac was approved by the U.S. Food and Drug Administration in 1987 (Wong et al., 1995). Other types of antidepressants include serotonin and norepinephrine reuptake inhibitors (SNRIs), norepinephrine reuptake inhibitors (NRIs), and atypical antidepressants. Sometimes stimulants (e.g., Ritalin) are used to treat depression. One type of antidepressant may be used to augment treatment with an antidepressant of a different type. The antidepressant effect of SSRIs is thought to be achieved by inhibiting the reuptake of the neurotransmitter serotonin, a chemical messenger in the brain. This inhibition allows more serotonin to be available for neurotransmission. While development of new antidepressant medications continues, the mechanism of action of many antidepressant medications is not clearly understood (Patterson, 2006).

Common side effects of SSRIs include anxiety, sedation, insomnia, nausea, gastrointestinal upset, sweating, headache, restlessness, and sexual dysfunction (Preston, O'Neal, & Talaga, 2008). A disadvantage of many antidepressants is that side effects are often experienced before therapeutic effects. For example, someone taking an SSRI may have to endure uncomfortable side effects for six to eight weeks before seeing any therapeutic benefits (i.e., reduction of target symptoms). This can cause some people to discontinue antidepressant treatment before realizing any benefits.

Serotonin syndrome is a potentially lethal condition that results from toxic levels of serotonin in the central nervous system. Serotonin syndrome can be caused by combining antidepressants with each other or with some opioids, antimigraine medications, stimulants (e.g., amphetamines, cocaine), empathogens (e.g., MDMA or Ecstasy), some herbs (e.g., St. John's wort), and various other medications and over-the-counter products. Symptoms of serotonin syndrome may include rapid heart rate, sweating, shivering, dilated pupils, tremor or twitching, muscular rigidity, elevated temperature, confusion, agitation, delirium, hallucinations, coma, or death. Combining antidepressants and alcohol is not advisable; alcohol, a depressant, can worsen clinical depression and increase the toxicity of some SSRIs.

Sudden discontinuation of some SSRIs can result in a withdrawal syndrome. Withdrawal symptoms may include dizziness, nausea, sweating, insomnia, tremor, or confusion. A schedule for tapering off antidepressants should be discussed with a doctor. Taking SSRIs during pregnancy may increase the risk of prenatal complications and could have adverse effects on newborns (Preston et al., 2008); potential risks should be discussed with a doctor. To avoid potentially harmful side effects and drug interactions, health care consumers should be sure that their doctors and pharmacists are aware of *all* medications they are taking, including over-the-counter medications, herbs and natural remedies, and dietary supplements.

See also atypical antidepressants, depression, generalized anxiety disorder, monoamine oxidase inhibiter, obsessive-compulsive disorder, posttraumatic stress disorder, Prozac (fluoxetine), serotonin, social anxiety disorder, St. John's wort, tricyclic antidepressant.

Further Readings:

American Psychiatric Association—Healthy Minds Web site: http://www.healthyminds.org/
Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/
How SSRIs work: http://www.humanillnesses.com/Behavioral-Health-Fe-Mu/Medications.html
National Alliance on Mental Illness Web site: http://www.nami.org/

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Self-Esteem

Self-esteem (also known as *self-regard* or *self-worth*) is one's attitude, opinion, or evaluation toward oneself; it may be positive (high), neutral, or negative (low; Colman, 2001). While the term is often used interchangeably with *self-image*, *self-esteem* means how much one values oneself, while *self-image* refers to one's conception or perception of oneself.

Parenting practices and styles are important to the development of self-esteem in children. In a study looking at construction of family narratives (stories), it was found that a higher level of engagement in emotional narratives by mothers was related to the development of positive self-esteem in pre-adolescent children. This was true when the mothers were telling stories about both positive and negative emotions (Bohanek, Mann, & Fivush, 2008). Peer relationships are very important during adolescence to help form a healthy degree of self-esteem. In particular, negative peer relationships and victimization by peers (being bullied) has been associated with low self-esteem in children and adolescents (Reynolds & Repetti, 2008).

In societies that put pressure on young females to be thin (e.g., North American), girls who are heavier (or think they do not conform to societal concepts of attractiveness) may suffer low self-esteem. Created in Nitro PDF Professional low self-esteem and distorted body image have been found in adolescent girls suffering from eating disorders (e.g., bulimia, anorexia nervosa; O'Dea, 2006).

Self-esteem is a feature of several disorders described in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000). Individuals with *avoidant personality disorder* have low self-esteem and are shy, quiet, anxious, inhibited, and reluctant to take personal risks. They tend to be inhibited in social or interpersonal situations, have a fear of rejection and failure, and are hypersensitive to criticism. Individuals with *narcissistic personality disorder* exhibit inflated (grandiose) self-image, a need for admiration, and a lack of empathy. These individuals enhance their self-esteem by the value they assign to people with whom they associate. They believe their associates to be powerful, important, or the "best"; they minimize the credentials of anyone who disappoints them. Individuals with narcissistic personality disorder have very fragile self-esteem, as manifested by an excessive need for admiration (e.g., fishing for compliments) and constant attention from others. Fragile self-esteem makes these individuals vulnerable and sensitive to criticism and failure. They tend to form intimate relationships or friendships only if the other person is likely to enhance their self-esteem (American Psychiatric Association, 2000). If self-esteem is threatened, narcissistic individuals are likely to retaliate with anger, hostility, rage, shame, or humiliation (Stucke & Sporer, 2002). Inflated self-esteem—a feature of manic episodes in *bipolar disorder*—may be characterized by grandiosity or uncritical self-confidence that may reach delusional proportions. Grandiose delusions are common (e.g., having a special relationship with a public figure, an exaggerated sense of unlimited personal power). Low self-esteem may be a feature of *depression* (e.g., in major depressive disorder, dysthymic disorder, or bipolar disorder). This may be evidenced by excessive self-criticism; individuals may see themselves as uninteresting or incapable. *Social phobia* may involve low self-esteem, including feelings of inferiority. Individuals with social phobia may fear evaluation or judgment by others, such as taking a test (American Psychiatric Association, 2000).

See also bipolar disorder, depression, dysthymia, major depressive disorder, gender and emotions, personality disorder, Rosenberg Self-Esteem Scale, self-image.

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Self-Image

Self-image is the idea or conception one has abo[illegible]neself (Colman, 2001). While the term is often used interchangeably with se[illegible]em, it refers to one's

perception of oneself, while *self-esteem* indicates the value one places on oneself (i.e., positive or negative). Adolescents and young adults often experience an identity crisis as they struggle to figure out who they are as individuals, and what social role best fits with their self-image. This has to do with the transition from a dependent child, whose identity is largely shaped by family, to an independent young adult, who is discovering his interests, abilities, and social role in relation to peers.

Society may promote body image ideals, suggesting through media images that males should be big and strong, while females should be thin and beautiful. These pressures can result in distorted body images. People who perceive themselves as heavier than societal ideals (especially adolescent females) may develop eating disorders. Distorted body image may also contribute to substance abuse, with males using steroids to gain muscle mass and both males and females using stimulants (e.g., diet pills, methamphetamine) to get or stay thin (Kumpfer, Smith, & Summerhays, 2008). Severe distortion of body image that results in marked distress and impairment is known as *body dysmorphic disorder*.

Western cultures (such as in the United States) tend to be individualistic, valuing autonomy and promoting independence, achievement of individual goals, attending to the self, and discovering and expressing unique, inner attributes. Asian cultures tend to be more collectivist, emphasizing harmonious interdependence with others, attending to others, and fitting in. Individualistic cultures tend to stress that emotions and personal attributes come from within (internal), while collectivistic cultures consider external factors—the individual's relationships, role, and obligations in relation to family and society. A culture's focus—on individual independence and autonomy (individualistic), or interrelatedness (collectivistic)—helps shape a person's self-image and self-concept (Markus & Kitayama, 1991).

Self-image is a feature of several personality disorders, as described in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). The *DSM-IV-TR*, used by mental health professionals in the United States, describes mental health disorders. A feature of *borderline personality disorder* is an unstable self-image as well as impulsivity, self-destructiveness, and unstable interpersonal relationships and mood. Unstable self-image or sense of self is characterized by shifting goals, values, vocational aspirations, sexual identity, and friends. The *DSM-IV-TR* describes individuals with borderline personality disorder as having a self-image based on being bad or evil or feelings of not existing at all. In *narcissistic personality disorder*, self-image is stable but inflated (grandiose). Narcissistic personality disorder is also characterized by a need for admiration and a lack of empathy. Inflated self-image is manifested in a sense of self-importance, exaggeration of achievements and talents, an expectation to be recognized as superior, preoccupation with fantasies of power and success, and a sense of entitlement. *Dissociative identity disorder* (formerly known as *multiple personality disorder*) is characterized by at least two distinct personality or identity states. It reflects a failure to integrate various aspects of identity, memory, and consciousness and is usually associated with a history of trauma. Each personality state may have its own personal history, self-image, identity, gender, and name. Different identities may emerge in specific circumstances (American Psychiatric Association, 2000).

In psychoanalytic terms, the superego (or ego ideal) forms an individual's idealized self-image. The super-ego's criticism, prohibitions, and inhibitions form the

conscience. Typically developing within the first five years of life, the super-ego reflects internalization of the parent's moral standards and values. Violation of these standards results in shame, guilt, or anxiety. As the child develops through adolescence, values and ideals from peers and society are incorporated into the child's changing self-image.

See also borderline personality disorder, culture, gender and emotions, personality disorder, psychoanalytic perspective, self-esteem.

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Sensation-Seeking and Risk-Taking

In the 1970s, American Psychologist Marvin Zuckerman began publishing articles and book chapters about sensation-seeking, a personality trait he had been studying for a number of years. Zuckerman (1979) defined *sensation- seeking* as "the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (p. 10). Sensation-seeking has four components: (1) thrill and adventure seeking (an attraction to activities that are physically risky), (2) experience seeking (an interest in novel experiences in the domains of music, art, travel, meeting unusual people, mood-altering drugs, and others), (3) disinhibition (pleasure seeking through parties, gambling, sex with new and various partners, drinking, and so forth), and (4) boredom susceptibility (tendency to become bored by routines and by predictable experiences with people).

Zuckerman has tried to explain the existence of this trait through investigating potential underlying biological factors (Zuckerman & Kuhlman, 2000). He has identified a promising biological mechanism, activity of the enzyme monoamine oxidase (MAO). MAO breaks down neurotransmitters (chemical messengers in the brain), effectively blocking some neurotransmission (firing of neurons); MAO functions to regulate the firing of neurons through decreasing the firing. According to research, individuals who are high in sensation-seeking may have unusually low levels of MAO. Zuckerman reasons that in these individuals, an increase in firing of certain neurons may result, leading to less control over behavior, thoughts, and emotions. Conversely, people who are high in MAO have more control over behavior, inhibiting their risky impulses.

A number of personality trait researchers view sensation-seeking as a component of the broader trait of extraversion (e.g., Eysenck & Zuckerman, 1978; Sutton & Davidson, 1997). Extraversion is one of the most well-known and well-researched traits in personality psychology. It primary components are sociability, positive emotion, activity and assertiveness, and possibly sensation-seeking and impulsivity. Assessing

an individual's level of extraversion (typically using self-report questionnaires) can be useful in a variety of contexts, including career counseling, marital or relationship counseling, and team building on the job.

Sensation-seeking has now been studied in many life domains: sport (often extreme sports), social behavior, choice of vocation, sexual behavior, economic behavior such as investing and trading, gambling, drug and alcohol use or abuse, criminal behavior, and others. Zuckerman's (2006) book *Sensation Seeking and Risky Behavior* reviews much of this research. In addition to the attention that sensation-seeking has received in academia, it has also inspired interest among the general public. Numerous Web sites invite browsers to take a sensation-seeking test or discuss sensation-seeking in a particular life context, for example, sports or sexual behavior.

See also affective personality traits, extraversion, PEN model of personality, personality, positive emotions.

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Why do some people engage in activities such as bungee jumping, skydiving, riding roller coasters, gambling, or other activities that tend to be exciting (and sometimes risky)? People who seek out adrenaline rushes and risky activities are high sensation-seekers (HSS). HSS seek out thrills and adventures and tend to be less inhibited and more easily bored than people who are low sensation-seekers (LSS). This makes HSS more likely to seek out experiences that involve significant risks; they are more vulnerable to engage in risky sexual behaviors, gambling, or drug abuse than their LSS counterparts. Brain imaging (functional magnetic resonance imaging) studies have shown that HSS show stronger responses to high-arousal stimuli in brain regions associated with arousal and reward (e.g., the right insula and the posterior medial orbitofrontal cortex), while LSS show greater activation in regions related to emotional regulation (anterior medial orbitofrontal cortex and anterior cingulate). This suggests that HSS demonstrate neural responses consistent with a more active approach system, while LSS show more in the area of inhibition (Joseph, Liu, Jiang, Lynam, & Kelly, 2009).

Serotonin

Serotonin is a hormone and neurotransmitter (chemical messenger) found in plants and animals. The chemical name of serotonin is 5-hydroxytryptamine (often abbreviated 5-HT). In the 1930s, Italian pharmacologist Vittorio Erspamer found a substance capable of causing smooth muscles (e.g., in arteries, intestines, bladder, respiratory tract) to contract. He called this substance *enteramine*. In the late 1940s, American scientists Irvine Page, organic chemist Maurice Rapport, and biochemist Arda Green isolated a substance they called *serotonin*. They named the substance serotonin because it was purified from beef serum (*sero-*) and was able to increase the tone of blood vessels (*-tonin*). In 1952, it was determined that enteramine and serotonin were the same substance. In 1952, American biochemist Betty Mack Twarog found serotonin in the brain of mammals, which brought serotonin into the field of neuroscience (Whitaker-Azmitia, 1999).

In humans, serotonin affects the central nervous system and has other functions, including cardiovascular, pulmonary, and energy balance. Behavioral and neurological functions modulated by serotonin include mood, sleep, pain perception, reward, fear, anger, aggression, memory, appetite, sexuality, stress response, addiction, and attention (Berger, Gray, & Roth, 2009). Serotonin plays a role in depression, bipolar disorder, and anxiety.

In the body, serotonin is derived from the amino acid tryptophan, a substance that occurs naturally in foods such as milk and turkey. The body converts tryptophan into serotonin. Advocates of nutritional treatments for depression suggest increasing dietary tryptophan (either through eating tryptophan-rich foods or consuming dietary supplements) as a treatment for depression.

Antidepressants that act on serotonin levels or utilization include monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), and others. Atypical antipsychotics and buspirone (used to treat anxiety and depression) also act on the serotonin system (Berger et al., 2009). Hallucinogens (e.g., LSD) affect serotonin levels as do empathogens such as MDMA (Ecstasy).

The herb St. John's wort, which is sometimes used as a natural treatment for depression, may affect serotonin levels. Combining medications (e.g., SSRIs and St. John's wort) that affect serotonin levels may result in serotonin syndrome, a potentially life-threatening condition. Symptoms of serotonin syndrome may include fever, sweating, confusion, restlessness, and tremor (Berger et al., 2009).

See also antidepressant, anxiety, bipolar disorder, depression, empathogen, hormones, major depressive disorder, monoamine oxidase inhibitor, neurotransmitter, selective serotonin reuptake inhibitor, tricyclic antidepressants

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Sex and Love Addicts Anonymous

Sex and Love Addicts Anonymous (SLAA) is a [illegible]tep fellowship, [illegible]d after Alcoholics Anonymous (AA), of people who suffe[illegible] a c[illegible]eed for sex o

who have a desperate attachment to another person. When sexual or emotional obsessive-compulsive patterns exist, relationships or sexual activities can become increasingly destructive to career, family, and a person's sense of self-respect. SLAA members seek to recover from the destructive consequences of addictive behaviors related to sex addiction, love addiction, dependency on romantic attachments, emotional dependency, and sexual, social and emotional anorexia. SLAA defines anorexia as the "compulsive avoidance of giving or receiving social, sexual, or emotional nourishment."

To counter the destructive consequences of addictive behaviors, SLAA members draw on five major resources: sobriety (willingness to stop acting out with addictive behavior on a daily basis), sponsorship and meetings, practicing the 12-step program of SLAA, service (giving back to the SLAA community), and spirituality (developing a relationship with a higher power). The 12 Steps of SLAA are modeled after the 12 Steps of AA. As with other 12-step programs, SLAA emphasizes that its program is spiritual, not religious. SLAA does not have opinions on issues outside of SLAA (e.g., religion, politics), nor is SLAA affiliated with any outside organizations. SLAA espouses the principle of anonymity of members at the public level and emphasizes the need for confidentiality. The SLAA fellowship is self-supporting through voluntary member contributions.

Other 12-step programs designed to help people recover from sexual compulsions or addictions include Sex Addicts Anonymous, Sexaholics Anonymous, Sexual Compulsives Anonymous (SCA), and Sexual Recovery Anonymous (SRA). Programs intended for family or friends of sex addicts (codependents) include Codependents of Sexual Addiction, Co-Sex and Love Addicts Anonymous, Love Addicts Anonymous, S-Anon International Family Groups (S-Anon & S-Ateen), SCA-Anon, and SRA-Anon.

See also 12-step programs.

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Shame

Shame may be defined as "the negative emotion felt when one fails or does something morally wrong and then focuses on one's own global, stable inadequacies in explaining the transgression" (Kalat & Shiota, 2007, p. 239). Shame, one of the emotions that involves an evaluation of the self (often called the *self-conscious emotions*), bears some similarity to guilt, another self-conscious emotion. Shame and guilt overlap in at least two important ways. First, the circumstances that lead to a feeling of either shame or guilt are often the same. In general, people tend to feel either shame or guilt when they have (1) done something that violates their sense of morality or (2) fallen short of living up to their own expectations or the expectations of others (Tangney, Miller, Flicker, & Barlow, 1996). Additionally, the facial and bodily expression of shame and guilt are similar. The individual looks down, either does not smile or has a very slight frown, and has a hunched or slumped posture (although some disagree with this last quality, saying that shame involves a slumped posture, whereas guilt

involves a posture that suggests that the individual anticipates moving forward in space; e.g., Lewis, 2008).

The main aspect that seems to distinguish shame and guilt is the individual's own interpretation of the negative event that evoked shame or guilt. Specifically, when experiencing shame, the individual feels that what happens to him reflects on his whole self, thinking, "I am a bad person." Conversely, when feeling guilt, the individual feels badly about an action that he did, thinking, "My behavior was bad," but does not feel badly about the whole self. Lewis (1992) calls this a *global* self-attribution (shame) versus a *specific* self-attribution (guilt). Because the attribution in shame is global, it is difficult to "get rid of" the emotion. The person feels that he wants to hide, disappear, or die. As Lewis (2008) states, the experience is so negative that the individual becomes confused and unable to speak, and the emotion interferes with behavior, especially with potentially proactive, corrective, or other positive behavior.

According to Lewis (2008), Sigmund Freud and neo-Freudian Erik Erikson were only moderately successful in distinguishing between shame and guilt. Freud focused more on guilt than on shame. In his model, guilt becomes a part of the personality (part of the superego) in young childhood, when the child internalizes the morality of his or her parent following his or her Oedipal/Electra complex (experience that involves falling in love with the opposite-sexed parent). As Lewis states, Freud, like modern guilt researchers, saw guilt as a reaction to one's behavior, without an attribution to one's whole self. Therefore, with guilt, an individual can make amends for the behavior through a penance, which may include either an actual attempt to help the injured party or through self-punishment or abstinence.

Erikson discussed shame and guilt in his psychosocial development theory. According to him, shame develops during toddlerhood (about one-and-a-half to four years old) as the child learns toilet training and other developmental achievements, especially those involving control of the muscles. Shame arises largely when the child is unable to have muscular control, particularly anal muscle control (which will happen in varying degrees to all children, and thus nearly all people will develop some degree of shame). Guilt develops during the stage immediately following, when the child locomotes more than in the prior stage, is able to take more initiative, and is able to be more destructive. A prototypical example is the child who, at this age (approximately four to six years), wants to push every button or switch that he comes across—such behavior can lead to disaster. Guilt serves to control this initiative, with the child's realization that he can be destructive and hurt others. Thus, for Erikson, shame and guilt can be distinguished from one another, and shame occurs earlier in development. In other writings, however, Erikson spoke of shame in such a way that it is not clearly differentiated from guilt (e.g., Erikson, 1950).

As Lewis (2008) suggests, shame has the potential to cripple people psychologically. He and others have been particularly interested in studying the shame that may (or may not) result from sexual abuse or other extreme maltreatment. Why do some people (but not others) blame themselves, such that they believe the abuse means that they are bad people? Lewis and others study this topic with the goal of learning how to help liberate people from the psychological suffering that can occur with shame.

See also embarrassment, Sigmund Freud, guilt, [illegible] development, pride, psychoanalytic perspective.

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Shyness

Shyness is an emotional state involving feelings of nervousness, awkwardness, and inhibition in social settings. Shyness bears some similarity to the self-conscious emotions shame, embarrassment, and guilt; however, shyness is an anticipatory emotion: individuals experiencing shyness are worrying about potentially embarrassing or awkward situations and the negative judgments that others will make of their behavior. Shyness may be a temporary emotional state that may occur to nearly everyone or it may operate as a personality trait (disposition). People with dispositional shyness feel tense and awkward across a wide variety of social situations. If shyness is extreme and it greatly impacts social interactions and other social behavior, the individual may be diagnosable with a social phobia.

Experiencing shyness involves feeling, physiological, cognitive (thinking), and behavioral aspects. An individual's feelings of nervousness and awkwardness are typically accompanied by bodily symptoms such as blushing, dry mouth, sweating, pounding heart, upset stomach, or dizziness. Fear that others will observe these physical symptoms intensifies the feelings of nervousness and awkwardness. An individual's thoughts are worrisome and self-preoccupied. Some of these thoughts are *meta-cognitions*, meaning thoughts about thoughts or other symptoms (Hendin & Cheek, 1999). For instance, while engaged in a social interaction, the individual may think, "I always say such stupid things" or "I wish I could be relaxed and normal like everybody else." Shy people's thoughts and beliefs tend to vary from those of most other people in that shy people believe others are constantly evaluating social interactions, that they themselves will be evaluated negatively, and that others are paying a great deal of attention to them. Additionally, they selectively remember aspects of interactions that reflect negatively on them, blame themselves for failures in social contexts, and believe successes are due to external factors such as luck. Behaviorally, the shy person tends to be withdrawn, unassertive, and nonconfrontational. She may have awkward body language such as fidgeting, avoiding direct eye contact, or maintaining a large personal space (Hendin & Cheek, 1999).

The shy person may or may not be low in sociability. Being low in sociability means that an individual does not desire much social interaction. However, some people who are shy have moderate to high sociability needs. These individuals experience a conflict between approach and avoidance, and their shyness, which inhibits their sociability, can be experienced as painful.

Shyness is associated with both positive and negative traits. For instance, shyness has been correlated with interpersonal warmth, modesty, and sensitivity (Hendin & Cheek, 1999). Additionally, some evolutionary psychologists view shyness as having survival value in humans and other animals (e.g., Hendin & Cheek, 1999). From this perspective, shyness is seen as related to subordination and submissiveness. The body language of shyness, including blushing, can be perceived by others as appeasement. Additionally, shyness is related to fear of strangers and of new situations. This vigilance and suspiciousness can save an individual's life. Overall, however, shyness tends to be viewed as negative in American culture, which values traits such as extraversion and assertiveness. Shy people tend to have relatively low self-esteem (Cheek & Melchior, 1990) and inferior social skills (e.g., Bruch, 2001). Shyness can has negative life effects, including lower achievement in school or work settings compared to individuals who are more outgoing or assertive. Additionally, shy people have more difficulty with friendship and romantic relationships (Nelson et al., 2008). Shy men are at an even greater disadvantage than women since in many cultures men are supposed to approach women when they are romantically interested; the same expectation is not placed on women.

It is possible for the shy person to change her attitudes about self and others and develop effective ways of interacting socially. Techniques that can decrease shyness include challenging and ultimately changing one's ways of thinking about oneself and about others, forcing oneself to behave in an outgoing or assertive fashion, learning social skills (communication in particular), taking medication, and other means (e.g., Antony & Swinson, 2008).

See also embarrassment, generalized anxiety disorder, guilt, introversion, loneliness, phobia, relationships, self-esteem, shame, social phobia.

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Single Photon Emission Computed Tomography

Single photon emission computed tomography (SPECT) is a body-imaging technique that produces two- or three-dimensional images of a subject. The SPECT technique involves administering radioactive particles to the subject so that activity of certain cells or chemicals in the body may be viewed. The pictures of cells or chemical

activity are made available for viewing on a computer screen. During the scanning, a gamma camera, which detects radioactive gamma rays, rotates around the subject, producing multiple pictures. The multiple two-dimensional pictures are then reconstructed by the computer to produce a two- or three-dimensional image.

In studying emotion, SPECT typically involves a picture of activity of the brain. For instance, in the study of schizophrenia, particular brain cells may be observed to determine if they are receiving appropriate amounts of a particular neurotransmitter (chemical messenger, e.g., dopamine). In a review of imaging techniques, Wong, Grunder, and Brasic (2007) concluded that the SPECT and positron emission tomography (PET) techniques hold a great deal of promise for aiding in the diagnosis, treatment, and prevention of a number of psychiatric disorders. Thus far, PET and SPECT techniques have been helpful in understanding schizophrenia, alcoholism and other drug abuse, attention-deficit hyperactivity disorder, depression, and other disorders.

SPECT and PET technology are similar to one another. SPECT produces longer-lasting images and therefore can monitor longer-lasting brain activity; the radioactivity used in PET scanning decays too rapidly for viewing of long-lasting activity. However, PET scans can produce images of a wider variety of brain activity than SPECT scans. SPECT has the benefit of being much less expensive to use. Resolution is better with PET (than SPECT). However, both PET and SPECT provide only limited visualization of brain structures, so sometimes fMRI (functional magnetic resonance imaging) is a better option (Hales, Yudofsky, & Gabbard, 2008). Both types of scans have contributed greatly to neuroscience, with new applications of the techniques being developed on a regular basis.

See also functional magnetic resonance imaging, positron emission tomography.

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B.F. Skinner (1904–1990)

Burrhus Frederick Skinner ("Fred") was born in Susquehanna, Pennsylvania. His father, a lawyer, was a gentle, conventional person. His mother, a homemaker, was described by Skinner as dominant, critical, sociable, and pretentious. Although Skinner was closer to his father than to his mother, the father-son relationship became more distant when Skinner's father became depressed during his late teens. Skinner's father had suffered some professional difficulties as a lawyer and was devastated by the death of Skinner's only sibling, a younger brother who passed away suddenly from what was most likely a cerebral hemorrhage.

Skinner attended Hamilton College in New York and graduated with a degree in English. Within a few months, he entered what he called his "Dark Year." For this "year" (actually about 18 months), he had convinced his reluctant parents to support him as he attempted to become a writer. The year became one of social isolation: his relationship with both parents was distant, he no longer had his brother, and he had no close connections other [illegible] correspondence relationships with some people

from college. He spent much of his time alone, in the library in his parents' house, writing, attempting to write, or working on crafts that he enjoyed. Although he had some encouragement from the poet Robert Frost, Skinner did not become a successful writer during this period of time; he produced only a few articles and short pieces of fiction and was not satisfied with his writing. It became clear to him that he would not become a professional writer. After reading works by John Watson, Ivan Pavlov, Bertrand Russell, and others, he realized he was interested in psychology. He entered graduate school at Harvard, studying psychology and physiology. During these years, Skinner was exposed to more behaviorist ideas and began research on conditioning squirrels and rats. He had found a philosophy that resonated perfectly. Behaviorism is an approach to psychology that emphasizes external causes of behavior (such as reinforcement or punishment) over internal causes (such as feelings or thoughts).

At age 32, Skinner was awarded a PhD, moved to the University of Minnesota to begin his first teaching position, and met Yvonne Blue. They soon married and had two daughters. The behaviorist work that Skinner began in graduate school continued at Minnesota, then at the University of Indiana, and at Harvard, where Skinner worked until his death. During his career, Skinner published prolifically on the conditioning of animals, primarily rats and pigeons. He achieved what John Watson, the founder of behaviorism, had not fully achieved: proof that behaviorism can be made into a science that is applicable. By the 1960s, with Skinner as its primary champion, behaviorism became the leading paradigm in American psychology. Its popularity has waned since then, as other approaches to psychology, such as cognitive science and neuroscience, have risen to the forefront. In a study ranking the 100 most eminent psychologists of the 20th century in the *Review of General Psychology* (Haggbloom et al., 2002), B.F. Skinner was ranked first, followed by Jean Piaget and Sigmund Freud. Among his influential books are *Beyond Freedom and Dignity* (1972), which presents Skinner's philosophy of determinism, and *Walden Two* (1948), a novel in which behaviorist principles are used to produce a utopian society. In 1990, 10 days before he died of leukemia, he was awarded a Lifetime Achievement Award by the American Psychological Association.

See also Animal Behavior Society, behavior therapy, behaviorism, conditioned emotional response, exposure with response prevention, pet therapy, John Watson.

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Skinner's early behavior experiments taught pigeons to dance and play tennis. He also taught two pigeons (Jack and Jill) to have a "conversation," in which they used labeled keys to communicate information, including asking what color a key was and asking the other pigeon for help, to obtain food rewards (Lanza, Starr, & Skinner, 1982).

Smiling

A smile is a facial expression formed by contracting muscles around the mouth and eyes. It often involves upturned lips and sometimes an open mouth. In humans, a smile may signify feelings of happiness, pleasure, or amusement, but it can also be a sign of anxiety, embarrassment, or fear. Smiles may serve to communicate greeting, appeasement, or apology. In animals (including humans and other primates), a snarl (which resembles a smile) may communicate fear, submission, or threatening intentions. For example, a dog baring the teeth might signify a warning. A chimpanzee "smile," or a grimace with bared teeth, generally signifies fear (Waller, Vick, Bard, & Smith Pasqualini, 2007).

A smile can be produced deliberately, by contracting the facial muscles, or spontaneously, in response to emotional or social stimuli. In 1862, French neurologist Guillaume-Benjamin-Amand Duchenne (also known as Duchenne de Boulogne, 1806–1875) studied the muscles involved in different types of smiles. Specifically, Duchenne differentiated between involuntary smiles (usually expressing enjoyment) and intentional, deliberate smiles. Duchenne observed that natural, involuntary smiles contracted both the zygomaticus major muscle (raising the corners of the mouth) and the orbicularis oculi muscle (raising the cheeks and forming crow's feet around the eyes). Charles Darwin referred to Duchenne's work in his 1872 book *The Expression of the Emotions in Man and Animals.* Later, American psychologist Paul Ekman suggested that the spontaneous smile described by Duchenne (and Darwin) be referred to as a *Duchenne smile* (Ekman, Davidson, & Friesen 1990). A non-Duchenne (or polite) smile only involves the zygomatic major muscle. Ekman has researched facial expressions extensively using the Facial Action Coding System (FACS; Ekman, Friesen, & Hager, 2002). Ekman notes that Duchenne smiling is more often associated with actual positive feelings such as enjoyment, amusement, happiness, excitement, or interest. Non-Duchenne smiles are more often associated with negative emotions, may function as social markers (e.g., to communicate appeasement), or may be used to mask feelings or to deceive (Papa & Bonanno, 2008). Duchenne smiles tend to correspond with activation of left, anterior (front) brain regions, while non-Duchenne smiles more activate right anterior brain regions. Other research has shown that positive emotions tend to activate left brain regions, while negative feelings more often activate the right side (Ekman et al., 1990). Duchenne smiles have been associated with higher levels of social integration and better health and well-being (Papa & Bonanno, 2008).

Human infants have been observed to smile from birth, with a large increase after 10 days of age and a further increase after about 3 months of age. Younger

infants tend to have unilateral (one-sided) smiles, while bilateral smiling (engaging both sides of the mouth) occurs in older infants (Kawakami et al., 2006). Typically developing infants usually engage in *anticipatory smiling*—smiling at an object then continuing to smile while gazing at a nearby person—between 8 and 12 months. Anticipatory smiling is a precursor to developing joint attention (coordinating visual attention between an object and a social partner), which is a crucial milestone in intentional communication (Venezia, Messinger, Thorp, & Mundy, 2004).

There is a widespread belief that lower social status is associated with more smiling. However, studies questioning this belief have found no relationship between self-perception of social status and smiling (Hall, Horgan, & Carter, 2002). While studies show that girls and women tend to smile more, the degree to which boys and men smile less varies by culture, role, and social expectations (LaFrance, Hecht, & Levy Paluck, 2003).

Gelotology—the study of laughter—has led to several types of therapy that make use of humor, laughter, and smiling. These include humor therapy, clown therapy, laughter therapy, laughter meditation, and laughter yoga. Promising health benefits (physical and psychological) have been demonstrated for some of these therapies (MacDonald, 2004).

See also amusement, anxiety, culture, embarrassment, Facial Action Coding System, facial expressions, fear, gender and emotions, happiness, human development, joy, negative emotions, positive emotions, primates.

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Social Learning

People learn new behaviors in many different ways; one of these ways is through *social learning*, which is learning through observing others. American psychologist Albert Bandura published a series of classic studies in the 1960s in which he showed that children can learn aggressive behavior simply through observing an adult behaving aggressively, especially if the adult is rewarded for the behavior (e.g., Bandura, Ross, & Ross, 1963). Bandura's theory of observational learning (social learning) supplemented the behavioral theory of learning, which held that people learn through direct, personal experience with situations; that is, people learn through reinforcement or punishment for their behavior (called operant conditioning) or through classical conditioning, which is when an organism associates two external stimuli, thereby learning to react very similarly to the stimuli. For instance, associating a painful dog bite with the dog itself, and therefore developing a fear of both dog bites and dogs, is an example of classical conditioning.

In addition to aggression, people can learn a variety of emotion-related behaviors through social learning. For example, phobias (fears) of specific objects or situations (such as fear of heights or snakes) can be learned through observing others react with fear to these situations (e.g., Bandura & Rosenthal, 1966). Attempts to reverse phobias can also utilize social learning approaches; a therapist can model counterphobic behavior toward a snake, for instance, moving close to the snake's aquarium and eventually handling the snake. Prosocial behaviors can also be learned through social learning. For instance, Poulos, Rubinstein, and Liebert (1975) found in an experiment that children who watched a prosocial episode of the *Lassie* television program in the lab behaved in a more helpful way toward puppies in a kennel than children who had watched television programs without particular prosocial themes. Social learning even extends to the animal kingdom; Heyes and Galef (1996) discuss a number of mammal and bird species that learn some behaviors through social learning.

See also aggression, animals, behavior therapy, behaviorism, phobia.

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Social Support

Relationships are among the most rewarding and fulfilling aspects of human experience. One of the most important benefits provided by relationships is *social support*, the assistance and encouragement that people receive from others as they cope with both everyday living and with tragedy. One way to think about social support is to identify the types of assistance that are provided in supportive relationships. When viewed this way, many scholars (e.g., Cutrona, Gottlieb, & Underwood, 2000) identify three categories of social support: *emotional*, *informational*, and *tangible* (also called

instrumental). *Emotional support* involves expressions of caring, affection, acceptance, reassurance, and the like. *Informational support* is information, guidance, and advice. *Tangible support* means assistance in the form of money, goods, or time. In an example illustrating these types of support, an individual calls her friend and describes a tough day at work; her boss criticized the quality of her work and a coworker accused her of undermining him. An individual providing emotional support may listen closely to her friend, validate her feelings, and tell her that everything will be OK. To provide informational support, the friend may talk about how she responded in similar situations, resulting in successful outcomes. When providing tangible support, the friend may offer to lend her friend a computer program that may improve her work efficiency or bring dinner over to her friend's house on the weekend to reduce the total amount of work that her friend has to do. These categories are not necessarily completely distinct; for instance, someone receiving tangible or informational support may also feel that she is also being cared for and that she is therefore receiving emotional support.

Another way to view social support is to consider an individual's social networks (e.g., Cohen et al., 2007). Many researchers have investigated the types of connections that people have with others in which social support may be provided. For instance, individuals may receive social support from family members, friends, coworkers, neighbors, other community members (such as fellow churchgoers), health providers, therapist, and others. Individuals' connections with others vary widely, both in terms of quantity and quality.

Social support can provide significant benefits. The area in which the benefits of social support have been studied most extensively has been physical health. Seeman and colleagues (2002) found that people who have partners who provide affection have lower blood pressure, cholesterol, and stress hormone levels than people who receive lower levels of affection and encouragement from others. Additionally, evidence is relatively strong that social support boosts immune function, and evidence suggests that social support may decrease mortality from cancer and from HIV/AIDS (for reviews of research on social support and physical health, see Uchino, 2004, 2006).

Social support also potentially improves close relationships for the recipients, and possibly for the providers. For example, when an individual provides social support, the recipient feels closer to that individual (Gleason, Iida, Shrout, & Bolger, 2008). However, support is not always beneficial and may sometimes cause a degree of harm. For instance, people may view a need for support as a sign of weakness or feel burdened because they feel obligated to reciprocate support. Bolger, Zuckerman, and Kessler (2000) have shown that often, the most effective support is "invisible." An individual receives *invisible support* without even being aware that support was provided. Bolger and colleagues studied this type of support in couples who lived together. All participants kept diaries in which they recorded the support that they provided and received during a period of time when one member of the couple was studying for the bar examination. The support that most effectively reduced test anxiety was reported by the support provider but not reported by the recipient. In other words, it appears that the recipient did not notice these provisions of support. Bolger and colleagues concluded that if an individual wants to help his family member, friend, or anyone else to cope effectively, it would be best to offer the support with as much subtlety and unobtrusiveness as possible.

Social support has been researched extensively in psychology and other fields, with an acceleration of interest in the 1970s. Other topics studied in relation to social support include gender, culture, stress, mental illness, and social support in work contexts.

See also family, friendship, intimacy, loneliness, relationships.

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State-Trait Anger Expression Inventory

The State-Trait Anger Expression Inventory (STAXI) was developed by American psychologist Charles Spielberger, who has produced several other psychological measures, including the State-Trait Anxiety Inventory. Spielberger identified several aspects of anger that may be relevant for psychological health and well-being and physical health. The first aspect is *state anger*, a measure of a subjective, short-term experience ranging from annoyance or irritation to rage. With state anger, physiological reactions occur, that is, the stress response, otherwise known as the fight-or-flight response. *Trait anger* is a measure of a general tendency to experience anger, or anger proneness. In addition to evaluating state and trait anger, the STAXI looks at *anger expression* (inward and outward) and *anger control* (inward and outward). *Anger expression inward* is the frequency of holding anger in when experiencing anger. *Anger expression outward* is the frequency of expressing anger outward, physically or verbally. *Anger control outward* is the tendency to experience anger and express it outwardly in a controlled fashion. *Anger control inward* is the general tendency to suppress anger by calming oneself down.

STAXI scores are helpful for understanding many aspects of anger in individuals, as described by Spielberger, Sydeman, Owen, and Marsh (1999). For instance, people who score at or above the 75th percentile in trait anger may have greater difficulty in interpersonal relationships or proneness to psychological or physical illness. A low score on trait anger (below the 25th percentile) combined with high scores on the measures of anger control inward and anger control outward may indicate high use of defense mechanisms to protect oneself from the unpleasantness or perceived "badness" of experiencing anger. The STAXI has been particularly useful in assessing the roles different aspects of anger play in several disorders, including alcoholism, heart disease, and cancer (Spielberger, 1988).

The STAXI was developed for [illegible] with individuals [illegible]16 and over (although a child and adolescent version is a[illegible]ilable) [illegible]d in a wide variety of contexts,

as both a research and a clinical instrument, to assess both normal and abnormal personality. It has been translated into many different languages.

See also anger, defense mechanisms, State-Trait Anxiety Inventory, stress.

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State-Trait Anxiety Inventory

American psychologist Charles Spielberger's interest in anxiety led him to develop the State-Trait Anxiety Inventory (STAI) in 1970. *State anxiety* is a temporary emotional reaction to an event or circumstance, and *trait anxiety* is a personality characteristic. The STAI uses 20 items to measure state anxiety and 20 items to measure trait anxiety. The primary difference between the two types of test items is the directions that are given to assessees (people taking the test). For state anxiety, assessees are asked to respond in terms of how they feel right now, at this moment, and for trait anxiety, they respond in terms of how they generally feel. Examples of items are "I feel upset" and "I am a steady person."

Research with the STAI has shown that state anxiety and trait anxiety are different concepts. For example, in one study (Spielberger, Auerbach, Wadsworth, Dunn, & Taulbee, 1973), patients awaiting surgery took the STAI before surgery and again afterward. When, after surgery, patients were told that their recovery was good, they showed less state anxiety than they had shown prior to the procedure. This result is consistent with the idea that state anxiety is temporary and changes with the situation. Trait anxiety levels were the same before and after surgery; the same individuals who had high levels before surgery had high levels after surgery, whereas some individuals had low levels both before and after surgery. Thus state anxiety operated as a state and trait anxiety operated as a trait in this context.

The STAI was developed for use with high school and college students and adults (a children's version is also available). It is used in a wide variety of contexts, as both a research and a clinical instrument. It has been translated into many languages and is widely used. It is the most frequently utilized measure of anxiety by health psychologists (Piotrowski & Lubin, 1990). Furthermore, it is frequently cited in the research literature (Plake & Impara, 1999).

See also anxiety, Beck Anxiety Inventory, Depression Anxiety and Stress Scales, Revised Children's Manifest Anxiety Scale.

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Spielberger, with D. Hackfort, wrote the book *Anxiety in Sports: An International Perspective* (1989). In 1972, as incoming president of the Southeastern Psychological Association, Spielberger appointed the first Task Force on the Status of Women for that organization.

Stereotype. *See* Prejudice.

Stimulant

Stimulants are substances (drugs or medications) that stimulate the central nervous system. These include major stimulants, such as amphetamines and cocaine (including crack cocaine), and minor stimulants, such as caffeine and nicotine.

Cocaine (also known as snow, blow, flake, and toot) is a naturally occurring alkaloid found in the leaves of the coca shrub, which is indigenous to the Andes Mountains in Peru and Bolivia. Peruvian Indians used to chew coca leaves mixed with lime. In 1886, cocaine was mixed with caffeine from African kola nuts to create Coca-Cola. In 1903, Coca-Cola removed the cocaine from the formula. In 1914, cocaine came under strict control in the United States with the Harrison Narcotics Act. Cocaine is typically taken through nasal inhalation (snorting), intravenous injection, or smoking (freebasing and crack). Side effects may include heart attacks, respiratory failure, strokes, and seizures. Large amounts (or long-term use) can cause psychotic behavior, hallucinations, and bizarre or violent behavior (National Institute on Drug Abuse, 2008). Cocaine is highly addictive. Moderate cocaine use can result in withdrawal (marked by depression and intense cravings for the drug) on discontinuation of the drug.

Amphetamines include methamphetamine (speed, crank, meth, ice), dextroamphetamine (e.g., diet pills such as Dexedrine), some attention-deficit hyperactivity disorder (ADHD) medications, and MDMA (Ecstasy). Adderall, a combination of dextroamphetamine and dextro/levo-amphetamine, is a medication used to treat ADHD and narcolepsy. Amphetamines have characteristics similar to cocaine in terms of physiological and psychological effects, side effects, addictive potential, and withdrawal. Amphetamines can be taken through snorting (nasally), smoking, injection, and anal insertion.

Stimulant diet pills (also referred to as anorectic medications) include benzphetamine (Didrex), diethylproprion (Tenuate, Tepanil), mazindol (Sanorex, Mazanor), phendimetrazone (Bontril, Prelu-2), phentermine (Lonamin, Fastin, Apidex), and fenfluramine and dexfenluramine (Fen-Phen), which were removed from U.S. market

in the 1990s). These medications can cause insomnia, irritability, hyperactivity, personality changes, and psychosis. Abrupt cessation can result in extreme fatigue and depression. It is dangerous to take these medications with other stimulants or with alcohol. Methylphenidate (Ritalin, Concerta) is a stimulant medication used to treat ADHD, chronic fatigue syndrome, narcolepsy, and depression. Street names include *kibbles and bits*, *vitamin R*, *kiddie cocaine*, and *study drugs*. Side effects may include insomnia, stomachache, diarrhea, headache, dry mouth, and appetite suppression, and psychosis. Methylphenidate should not be used in patients being treated with MAO inhibitors (a type of antidepressant) because of possible side effects on blood pressure. Methylphenidate has addiction and abuse potential.

Minor stimulants—including caffeine, nicotine, guarana, and ephedra—are less potent central nervous system stimulants than the major stimulants (e.g., cocaine or amphetamines). Other minor stimulants include theophylline (found in tea) and theobromine (found in cocoa beans). Caffeine is most potent in coffee and is also found in tea, cocoa, and kola nuts (used to make cola drinks). Excessive caffeine intake can lead to a rapid heart rate, increased urination, nausea, vomiting, restlessness, anxiety, confusion, depression, tremors, or difficulty sleeping. Caffeine use should be restricted or avoided in people with coronary heart disease or peptic ulcers, children, and women who are pregnant or nursing. Caffeine may interact with other stimulant medications or substances that contain stimulants. While caffeine has little addictive potential, abrupt discontinuation of caffeine can result in headaches, drowsiness, irritability, nausea, vomiting, and fatigue. Guarana, a plant with a high caffeine content, is often found in energy drinks. Ephedra (from the plant *Ephedra sinica*) is found in some teas or herbs used to treat asthma and other breathing problems; it is also found in some herbal weight loss products. Until 2004, many herbal weight loss and quick energy products combined caffeine or caffeine-containing herbs with ephedra. This combination may lead to dangerously increased heart rate and blood pressure and should be avoided by people with heart conditions, high blood pressure, diabetes, or thyroid disease.

Stimulants affect several neurotransmitters (chemical messengers in the brain) including epinephrine, norepinephrine, dopamine, and serotonin. Effects on epinephrine and norepinephrine can cause increased heart rate, blood pressure, respiration, and body temperature. Stimulants may increase alertness (also causing insomnia or sleeping difficulties) and energy and decrease appetite. They can also cause euphoria or a sense of well-being. One reason stimulants can be so addictive is that they flood the brain's "reward" (limbic) system with the neurotransmitter dopamine (National Institute on Drug Abuse, 2007).

Nicotine (found in tobacco) differs from other stimulants in that it acts as both a stimulant and a depressant. It produces a feeling of relaxation or satisfaction rather than the euphoria produced by major stimulants. Tolerance to nicotine develops rapidly, necessitating increased amounts of nicotine to produce similar pleasurable effects. Nicotine is highly addictive; discontinuation causes withdrawal effects, including cravings, irritability, anxiety, depression, sleep disturbance, increased appetite, and restlessness. Tobacco may be ingested through smoking, chewing, or nasal inhalation (snuff).

Treatment for stimulant dependence may include some combination of inpatient or outpatient programs for the initial stages of treatment, cognitive-behavioral therapy,

12-step programs (such as Narcotics Anonymous), other psychotherapeutic approaches (such as motivational interviewing), and/or pharmacotherapy (medication). Medications sometimes used to treat cocaine addiction include topiramate, modafanil, baclofen, and some antidepressant medications (National Institute on Drug Abuse, 2004). Bupropion (the antidepressant medication Wellbutrin) is being explored as a component of treatment for methamphetamine dependence (National Institute on Drug Abuse, 2006).

See also Narcotics Anonymous, neurotransmitter, Substance Abuse and Mental Health Services Administration, substance abuse, sympathetic nervous system, 12-step programs.

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St. John's Wort

St. John's wort (*Hypericum perforatum*) is an herbal product marketed as a dietary supplement. It is frequently used as a treatment for depression; it has also been used to treat nerve pain, anxiety, sleep disorders, malaria, insect bites, wounds, and burns.

St. John's wort is also known as amber touch-and-heal, balm-of-warrior's wound, balsana, bassant, Blutkraut, corancillo dendlu, devil's scourge, Eisenblut, flor de Sao Joa, fuga daemonum, goatweed hartheu, heofarigo on herba de millepertius, herba hyperici, herrgottsblut, hexenkraut, hierba de San Juan, hipericao, hiperico hipericon, isorhamnetin, Jarsin, Johanniskraut, klammath weed, liebeskraut, millepertius pelicao, perforate, pinillo de oro, pseudohypericin, rosin rose, tenturotou, Teufelsflucht, touch and heal Walpurgiskraut, and witcher's herb.

A study with 340 participants found that St. John's wort was not more effective than a placebo (sugar pill) in the treatment of major depression of moderate severity (Hypericum Depression Trial Study Group, 2002). However, an evidence-based monograph from the Natural Standard Research Collaboration (2009) claims that scientific evidence supports the effectiveness of St. John's wort to treat mild to moderate depression. Research does *not* support the effectiveness of St. John's wort as a treatment for severe depression, seasonal affective disorder, anxiety, obsessive-compulsive disorder, premenstrual syndrome, menopause symptoms, social phobia, or HIV.

A photo of St. John's Wort. St John's wort is widely known as a herbal treatment for depression. Its effects are also being studied to treat alcoholism, ADHD, and Parkinson's disease. (iStockPhoto)

Common side effects of St. John's wort include dry mouth, dizziness, gastrointestinal symptoms, increased sensitivity to sunlight, fatigue, sexual dysfunction, swelling, and urinary frequency. There are reports of St. John's wort causing suicidal or homicidal thoughts. Use of St. John's wort may reduce the effectiveness of certain other drugs, including indivir (a protease inhibitor used to treat HIV), cyclosporine, birth control pills, and medications for heart disease and depression.

Combining St. John's wort with other selective serotonin reuptake inhibitor (SSRI) antidepressants can be dangerous, causing serotonin syndrome or precipitating mania. *Serotonin syndrome* is characterized by muscle rigidity, fever, confusion, increased blood pressure and heart rate, and coma (Henney, 2000).

See also complementary and alternative medicine, depression, major depressive disorder, nutritional therapies.

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The Stoics

Stoicism was founded by the Greek philosopher Zeno (ca. 336–265 BC) around 300 BC. Stoicism is so named because of the building in which Zeno used to teach, the *stoa.* Zeno, like the Epicureans who were contemporaneous with him, taught that the key to the good life—a life of compassion and kindness toward others—comes from

managing our emotions. Emotions can often interfere with the good life. Zeno and Epicurus (the founder of Epicureanism) recognized the difficulty in simply suppressing an emotion once it has begun. Therefore we must control what happens before our problematic emotions occur; that is, we must control our desire.

The Epicureans held that it is unnatural, ultimately ungratifying, and potentially destructive to desire dramatic, unattainable things such as power or large quantities of money. They promoted the enjoyment of simple pleasures such as a good meal, an enjoyable time with a friend, and a little bit of lightheadedness that may come with drinking a glass of wine. The Stoics, however, were more extreme in their admonition to eliminate emotions. They argued that practically any desire can potentially be harmful. One of the most influential Stoics, Chrysippus (ca. 280–206 BC) distinguished between the "two movements" of an emotion. The first movement is reflexive, bodily, and uncontrollable. Charles Darwin (1872/1998), who wrote a classic book about emotion, *The Expression of the Emotions in Man and Animals*, describes this emotional aspect in an experiment he conducted on himself. He went to the London Zoo and pressed his face against the glass window cage holding a puff adder snake. Darwin was determined that since he knew he was safe behind the glass, he would not startle when the snake struck at him. The snake did strike, and Darwin "jumped a yard or two back with astonishing rapidity" (p. 40). Like Chrysippus, Darwin realized that he could not control this reaction no matter how hard he tried. According to Chrysippus, the second movement of an emotion is real emotion. This is when we freely choose to translate our desires into behavior. At this point, one can make a decision as to what truly matters. By eliminating wrong desires, we can eliminate the second movements.

We must therefore consider our desires and decide what is important. As we are making these assessments, we will realize that the sources of some desires are worthless—of no real value—and that pursuing these desires would lead to outcomes that are of no real worth. Pursuing some desires may even lead to strong negative emotions such as anger or jealousy. According to Stoics, the worthwhile in life is really only character, rationality (our ability to reason), and kindness. These aspects are permanent and of substance. But many of our desires come from valuing things that are empty and fleeting. For instance, as the Stoic Marcus Aurelius (AD 121–180) described, feeling outraged when someone insults us, or even feeling proud when recognized for a generous act, comes from valuing the transitory in life, which the Stoics called *indifferents*. A Stoic, then, is supposed to distinguish between what may feel immediate and pressing (but that has no real value) and what is truly important. In this way, any inappropriate second movements can be eliminated. The goal of Stoicism was an inner peace that was achieved through self-control of one's emotions. True Stoics practiced their philosophy as a way of life, and this involved introspection that is similar to Eastern meditation.

Stoicism, a way of life for some Greeks during the remainder of the Greek Age, survived through much of the Roman Era as well. Stoicism bears some similarity to modern approaches that advocate the control of emotions through cognition, such as Albert Ellis's ABC model of emotional reaction and other ancient philosophies such as Buddhism.

See also ABC model of emoti[illegible] reaction; Budd[illegible] cognitive therapy and cognitive-behavioral therapy, th[illegible]ure

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Stress

People have an intuitive understanding of the concept of stress but may not be aware of all of its facets. Stress is most commonly thought of as psychological tension ("I feel stressed"); this description is partly accurate. Stress is also a physical response to a threatening or challenging situation (a stressor) and involves activation of most body systems. This physical response, called the *stress response* or the *fight-or-flight response*, is quite dramatic and includes elevated heart rate, elevated blood pressure, release of stress hormones including adrenaline, mobilization of energy stores in the body (i.e., glucose in the liver), a slowing of digestion, enhanced blood flow to large muscles, pupil dilation, and many other physical changes. In short, stress is experienced both physically and psychologically; it is an arousal of both body and mind.

The study of stress is popular largely because stress is costly to individuals. It can cause damage to the body that is severe enough to contribute to both physical and psychological disease states. Both Sapolsky (2004) and McEwen and Lasley (2002) wrote highly informative and readable books about the relationship between stress and disease. As they (and others) describe, it is clear that stress contributes to heart disease. When under stress, the stress hormones cortisol and epinephrine (adrenaline) mobilize cholesterol and fats for energy. The cholesterol and fats that are not used during the stress response may continue to circulate through the bloodstream, adhering to the inside of blood vessels. This adhesion, called *atherosclerosis*, reduces the circumference of the blood vessels, leading to an increase in blood pressure which can damage the entire circulatory system including the heart. This is only one of many ways that stress can contribute to heart disease.

Stress often suppresses the immune system, increasing susceptibility to many types of infections (possibly multiple infections). As Sapolsky (2004) describes, the evidence is clearest regarding the common cold: immune suppression related to stress increases common cold risk. Additionally, stress is probably related to the worsening of AIDS. More research is needed to determine the precise relationships between stress, immune suppression, and susceptibility to infections of various kinds.

Stress contributes to psychiatric disease. A clear connection has been found between stress and clinical depression, which is more common among people who have experienced significant stress. Research on the relationship between stress and psychiatric diseases including depression is currently active and promising. Additionally, stress has been associated with symptoms that are not considered disorders, for example fatigue states (because the stress response is highly energy consuming) and irritability and interpersonal problems, both of which may be related to fatigue. Even if stress does not cause a disease, it can affect an individual's well-being. In sum, stress is related to many types of diseases, both physical and psychiatric, and dysfunction.

A variety of stress management techniques are available to mitigate the damaging effects of stress, or even to prevent negative effects. Meditation, and Reevy

(2007) describe, stress management techniques can be divided into three basic categories: (1) a change in one's environment or lifestyle, for example, maintaining proper nutrition, quitting smoking, or avoiding stressors; (2) a change in one's personality or perception, for example, choosing to see the silver lining in the cloud, using one's sense of humor, or taking an anger management course; and (3) a modification of the physiological effects of stress, for example, meditation, deep breathing, or massage. A number of excellent books provide how-to descriptions of many potentially helpful stress management techniques, including Davis, Eshelman, and McKay's (2008) *The Relaxation and Stress Reduction Workbook*, which has sold over 700,000 copies.

As a number of stress experts, including Lazarus (1999), have noted, stress and emotion are interconnected: when one experiences an emotion, especially one of the negative emotions, a stress response ensues. (In general, strong emotions produce strong stress responses and mild emotions produce less intense stress responses.) This is true regardless of the specific negative emotion—fear, anger, and sadness are all associated with increased heart rate, increased blood pressure, release of stress hormones, and so on. Lazarus therefore recommended that stress researchers and emotion researchers collaborate to better understand these psychological phenomena.

See also autogenic training, deep breathing, meditation, mindfulness, progressive muscle relaxation, stress hormones, yoga.

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In the United States, 7 out of 10 adults report experiencing stress or anxiety daily and say that it interferes at least moderately with their lives. A 2008 online poll by the Anxiety Disorders Association of American (ADAA) found that 14 percent of people make use of regular exercise to cope with stress. Others reported talking to friends or family (18%), sleeping (17%), watching movies

or TV (14%), eating (14%), and listening to music (13%). Health care professionals recommend exercise to reduce stress. Studies have shown that exercise can effectively reduce fatigue, improve alertness and concentration, and enhance overall cognitive function. Exercise and other physical activity produces endorphins (brain chemicals that act as natural painkillers) and improves the ability to sleep, which reduces stress. Meditation, acupuncture, massage therapy, and deep breathing also prompt the release of endorphins and help to cope with stress (Anxiety Disorders Association of America, 2008).

Stress Hormones

Several hormones play a key role in the complex mind-body reaction that is the stress response. Most stress hormones are secreted from the adrenal glands which are located above each kidney.

The stress response is initiated by a part of the brain called the *hypothalamus*. The hypothalamus, through both nerve connections and hormone-releasing factors that are released into the bloodstream, stimulates the pituitary gland, the *master gland* located immediately below the hypothalamus. In turn, the pituitary gland releases hormones into the bloodstream. These hormones stimulate the adrenal glands to release the hormones that more directly cause the stress response.

Two of the first hormones released by the adrenal glands, adrenaline (epinephrine) and noradrenalin (norepinephrine), primarily affect the cardiovascular system. Adrenaline increases the heart rate and the force of the heartbeat. Noradrenaline initiates contraction of blood vessels which increases blood pressure. With these actions, the heart becomes quite effective at delivering large quantities of blood, rapidly, to needed muscles and other parts of the body that are critically involved in the stress response. In addition, adrenaline increases muscle tension.

A few moments later, the adrenal glands release cortisol and aldosterone. Cortisol primarily mobilizes energy for the stress response. Specifically, it mobilizes fat stores, protein stores (using amino acids from muscle tissue), and increases blood glucose (sugar) through a metabolic process called *gluconeogenesis*. Aldosterone increases sodium retention, which causes water retention. The purpose of the increased water retention is to stimulate the elimination of body waste. Many other hormones are involved in the stress response, including prolactin, endorphins, enkephalins, and vasopressin (an antidiuretic hormone). The stress response is dramatic and extremely complex.

Stress and stress hormones are associated with moods and emotions (Wallenstein, 2003). Cortisol has been linked with several emotions, including fear and depression. Adrenaline is linked with fear and anger. Much is still unknown about the precise relationships between stress hormones and emotion; a good starting point for investigating this topic is Gene Wallenstein's (2003) book *Mind, Stress, and Emotions: The New Science of Mood.*

See also anger, depression, fear, hormones, hypothalamus, physiology of emotion, stress, sympathetic nervous system.

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Subjective Experience of Emotion

An emotion is a complex phenomenon involving a physiological component (e.g., autonomic nervous system responses, brain activity), thoughts, often a behavioral or action component, and the subjective experience, which is called an emotional *feeling*.

There are several prominent theories regarding the origin of the subjective experience component of an emotion and how it is related to other emotion components. In the classic James-Lange theory (Lange & James, 1922/1962), first discussed in the late 1800s, a quick cognitive judgment, physiological response, and behavior all occur before emotional feeling; the individual notices a stimulus (e.g., a bear running toward him) and makes a quick judgment of "good" or "bad"; a physiological response occurs (e.g., his heart races, he perspires, and so forth), often accompanied by a behavioral response (e.g., he runs away); then the emotional feeling occurs last. An alternative view is the Cannon-Bard theory (Cannon, 1915/1929): an event occurs (a bear runs toward an individual), and the aspects of emotion—cognitive appraisal or assessment, action (behavior and physiology), and emotional feeling—occur simultaneously and practically independently of one another.

A number of modern emotion theorists agree at least with the appraisal-first-then-feeling aspect of the James-Lange theory (e.g., Lazarus, 2001), although not necessarily with other aspects of the theory. Evidence does exist that people form quick "good" or "bad" judgments prior to experiencing emotional feelings. For instance, in one experiment, people who were presented with a fearful face responded with slight sweating and trembling, even if the photo was presented so briefly that people reported that they did not see the photo at all (Vuilleumier, Armony, Driver, & Dolan, 2001). In another study, researchers recorded brain activity with an electroencephalogram (EEG) while participants looked at photographs of happy, angry, or neutral faces. Seeing an angry face was associated with a strong EEG reaction 200 to 300 milliseconds after the presentation of the photograph, whereas seeing a happy or neutral face did not produce that response (Schupp et al., 2004). However, as Kalat and Shiota (2007) point out, cognition can certainly occur after an emotional feeling. For instance, sometimes people have sudden angry outbursts, perhaps yelling at a person in an impulsive manner. In this case, the person may not know exactly why he yelled and may have to come up with a reason (perhaps a rationalization) later. For example, maybe he yelled at the person because the person is always self-centered (and was reminded of that in the moment). In sum, Kalat and Shiota suggest that the basic identification of good or bad usually occurs very quickly, usually followed by an emotional feeling, but in some situations the emotional feeling may come first.

Emotion scholars also discuss whether physiological response is necessary for emotional feeling. In a review of relevant research, Kalat and Shiota (2007) describe research

findings as few and inconclusive. The best evidence would come from individuals who suffer from a condition called locked-in syndrome (sometimes associated with stroke or traumatic brain injury), in which they have lost almost all nerve signals from the brain to both the muscles and the autonomic nervous system. James had hypothesized that emotional feeling comes from the physiological response of the autonomic nervous system. If his theory is correct, patients with locked-in syndrome would have very little emotional feeling. However since these patients also can communicate only minimally, for example, through eye blinks, it is difficult to tell what they are feeling. The issue of the relationship between physiological response and emotional feeling is thus unresolved.

See also appraisal, behavior and emotion, feeling, James-Lange theory of emotion, physiology of emotion.

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Substance Abuse

One of the most common psychological maladies affecting people in many cultures throughout the world is abuse of drugs that affect psychological functioning (known as psychoactive drugs). Abuse of these drugs may also affect physical functioning over time (e.g., the abuse may eventually cause liver damage). Examples of commonly abused psychoactive drugs are alcohol, amphetamines, cannabis, cocaine, hallucinogens, inhalants, opioids, and sedative-hypnotics.

Use of drugs does not necessarily imply abuse. The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000) lists specific criteria for substance abuse, as follows: a maladaptive pattern of substance use that results in considerable impairment or distress, as characterized by one or more of (1) repeated substance use leading to deficiency in performing important role obligations at work, school, or home (e.g., failure to show up at work or school or neglecting one's children); (2) recurrent substance use in contexts in which the use causes physical hazards (e.g., substance use while driving); (3) repeated legal problems due to the substance use (e.g., arrests for disturbing the peace); and (4) persistent substance use despite awareness of social or interpersonal problems associated with the substance use (e.g., arguments with domestic partner about the substance use).

Substance abuse does not imply substance dependence, although dependence does imply abuse. The *DSM-IV-TR* describes substance dependence as a maladaptive pattern of substance use leading to considerable impairment or distress, with at least three of the following symptoms: (1) tolerance for the substance, as indicated by a

need for greater amounts of the substance to produce the desired psychological state, or notably decreased effect as one continues to use the same amount of the substance; (2) withdrawal symptoms; (3) use of larger amounts of the substance, or over a longer period, than planned; (4) unsuccessful attempts to decrease or control substance use; (5) large amounts of time spent attempting to obtain, use, or recuperate from the effects of the substance; (6) significant social, occupational, or recreational activities are decreased or abandoned because of use of the substance; and (7) substance use is continued despite awareness of physical or psychological problems associated with the use.

Large numbers of people in the United States display substance abuse or dependence. According to the National Survey on Drug Use and Health, 19 percent of Native Americans; between 9 and 10 percent of Caucasian Americans, Hispanic Americans, and African Americans; and 4.3 percent of Asian Americans abuse or are dependent on a substance or substances. In total, 9.2 percent of teens and adults in the United States abuse or are dependent on substances in any given year (National Survey on Drug Use and Health, 2008).

There is likely more than one cause of substance abuse or dependence. According to the sociocultural viewpoint, substance abuse is related to socioeconomic stress and to cultural values and customs. Some evidence supports these assertions. For instance, people from lower socioeconomic groups abuse substances at a higher rate than people with higher socioeconomic status (e.g., Franklin & Markarian, 2005). Rates of alcoholism are relatively high in Ireland and Eastern Europe, where alcohol use is more culturally entrenched and accepted, and where people may communicate less clearly about limiting substance use than people from other cultural backgrounds (e.g., Ksir, Hart, & Oakley, 2008; Ledoux, Miller, Choquet, & Plant, 2002). Behavioral and cognitive factors may also contribute to substance abuse and dependence. Behaviorists suggest that drug use is reinforced by being rewarding both through producing pleasurable feelings and by reducing tense feelings (e.g., Ksir et al., 2008). Cognitive theorists further reason that the *anticipation* of pleasurable effects from using substances further encourages substance use (Chassin, Collins, Ritter, & Shirley, 2001). Some evidence has supported these behavioral and cognitive perspectives. For instance, it appears that people are more likely to seek out substances such as alcohol or heroin when they feel stress (e.g., Cooper, 1994).

Both genetic and biological factors probably contribute to substance abuse and dependence. Studies of children who are adopted shortly after birth support a genetic contribution. In these studies, children whose biological parents suffered from alcohol dependence were compared to children whose biological parents had no alcohol dependence. By the time the children reached adulthood, those with alcohol-dependent biological parents had higher rates of alcohol abuse (e.g., Walters, 2002). Drugs also operate on neurotransmitters (chemical messengers in the brain), which have varying functions, including lifting mood, reducing pain, and increasing alertness. The effects that drugs have on these neurotransmitters partially explains why using drugs is often experienced as pleasurable, and why people would seek drugs to achieve these effects.

Substance abuse and dependence are treated through a variety of modalities. Some treatments work at the biological level, such as detoxification, which is withdrawal from a drug while under medical supervision, and maintenance therapy, in

which a person who is dependent on a high-risk drug such as heroin is given a similar, but less dangerous drug (typically, methadone in place of heroin) as a substitute for the dangerous drug. Treatment may also operate at the behavioral level. For instance, aversion therapy involves associating the drug with something highly unpleasant. When treating alcohol addiction, a medication may be administered that produces nausea and vomiting if alcohol is used. The natural aversion for nausea and vomiting may lead to an aversion for the substance that is being abused. Support groups (such as Alcoholics Anonymous, Narcotics Anonymous, and other 12-step programs) and residential treatment programs are also used to treat abuse and dependence. A variety of authors in Francis, Miller, and Mack's (2008) edited volume describe these treatments and others. As discussed in these chapters, treatments require hard work on the part of the addicted individual and are most often moderately successful rather than highly successful. It is important to fully understand abuse and addiction to further alleviate the suffering and cost associated with this relatively common form of mental illness.

See also Alcoholics Anonymous, aversion therapy, cognitive therapy and cognitive-behavioral therapy, depressant drugs, detoxification, empathogen, stimulant, 12-step programs.

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- The United Nations Office on Drugs and Crime estimates that in 2007, between 172 and 250 million persons used illicit drugs at least once in that year and that there were between 18 and 38 million problem drug users from 15 to 64 years of age in 2007. In Africa and Oceania, more people sought treatment for problems with cannabis than any other drug (63% in Africa; 47% in Australia and New Zealand), while opiates were the primary drug treated in Asia (65%) and Europe (60%). Cocaine was more prominent in North America (34%) and South America (52%) than in other regions. Amphetamines were more prominent in Asia (18%), North America (18%), and Oceania (20%). Cannabis has been playing an increasingly large role in drug treatment in Europe, South America, and Oceania since the late 1990s, while amphetamines account for a greater share of drug treatment in North and South America than in the past (United Nations Office on Drugs and Crime, 2009).
- Many celebrities have died as a result of substance abuse, including Elvis Presley, John Belushi, and Chris Farley (Comer, 2010, p. 397).
- The theme of substance abuse has been depicted in countless movies, including *Basketball Diaries* (1995), *Fear and Loathing in Las Vegas* (1998), *Pulp Fiction* (1994), *Requiem for a Dream* (2000), *Synanon* (1965), *Traffic* (2000), and *Trainspotting* (1996).

Source: http://www.imagiscape.ca/research/art/Movies%20and%20Mental%20Illness%20Filmography.htm

Substance Abuse and Mental Health Services Administration

The Substance Abuse and Mental Health Services Administration (SAMHSA), a division of the U.S. Department of Health and Human Services, was established in 1992. The purpose of SAMHSA is to devote energy, programs, and funding to improve the lives of people at risk for or suffering from a mental illness or addictive disorder. Specifically, SAMHSA was created with the vision that all people, including those with or at risk for mental or addictive disorder, deserve satisfying lives that include a home, a job, and fulfilling relationships with family and friends.

To work toward these ends, SAMHSA offers a wide variety of services, most of which are described and presented on the organization's Web site. SAMHSA collects and compiles epidemiological data on mental illness and addiction at federal and state levels. The SAMHSA Web site lists federal grant opportunities available to researchers studying mental illness or addiction. SAMHSA offers a variety of programs and campaigns, for instance, Building Blocks for a Healthy Future, designed to teach caregivers of three- to six-year-olds about prevention; the "Mental Health Services Locator," a searchable directory of mental health treatment centers; and the Suicide Prevention Resource Center. SAMHSA publishes information about mental disorders and addiction in many formats, including newsletters, brochures, and reports.

SAMHSA is a resource for mental health workers, researchers, people suffering from mental illness or addiction and their families, and the general public.

See also substance abuse.

Further Reading:

Substance Abuse and Mental Health Services Administration Web site: http://www.samhsa.gov/

Surprise

Surprise is a reaction that occurs when one's expectations have been violated. Surprise may or may not qualify as an emotion. According to Hadwin (1999), it meets many of the criteria for a basic emotion: it is characterized by a unique facial expression, behavior, physiological change, and subjective experience. American psychologist Paul Ekman, who conducted classic cross-cultural studies on emotion and facial expression, classified it as one of only six basic emotions, which also include happiness, sadness, fear, anger, and disgust (Ekman, 1984). However, an alternative way of viewing surprise is that it is not an emotion but rather a cognitive state. Ortony, Clore, and Collins (1988) defined emotion as a "valenced" reaction, which means that the reaction is either positive or negative. They state that surprise is neutral and is therefore not an emotion at all; surprise is unexpectedness only. They further state that events can occur that include reactions of both surprise and happiness, which they call *pleasant surprise*. For example, a child could be (unexpectedly) presented with a new rocking pony. Her first, very quick reaction is related to the unexpected nature of the gift—she is surprised. Very soon after this reaction, she feels pleasure or happiness.

Regardless of whether surprise is an emotion or a cognitive state, many have argued that surprise is functional. In his classic book on emotional expression, *The Expression of the Emotions in Man and Animals*, Charles Darwin (1872) stated that the facial expression of surprise, with highly elevated eyebrows and eyes wide open, allows people to see and react to events. Similarly and more recently, Tomkins (1962) asserted that the surprised expression allows for an interruption of the individual's present activity, which means that she can attend to new events and analyze them. According to Steinsmeier-Pelster, Martini, and Reisenzein (1995), surprise functions to motivate people to examine and explore the event or situation that was surprising.

See also basic emotions, facial expression.

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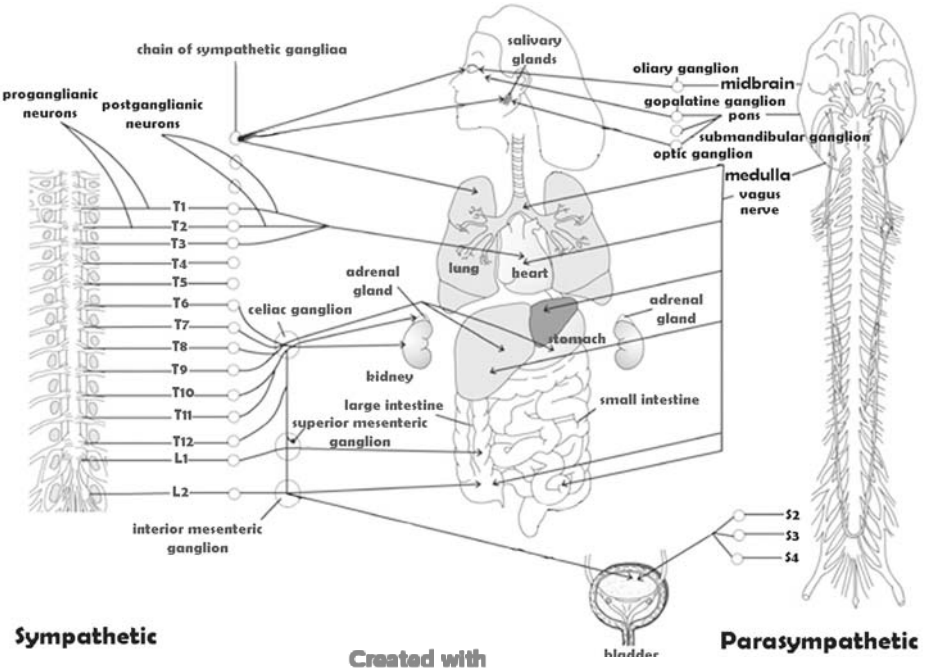
Sympathetic Nervous System

The sympathetic nervous system (SNS) is a division of the autonomic nervous system (ANS). Neurons in the ANS monitor the organs and internal activities such as heart rate, digestion, breathing, energy mobilization, and glandular activity. The ANS regulates these internal body functions to maintain the body's homeostasis (balance). The SNS and the other primary division of the ANS, the parasympathetic nervous system (PNS), immediately respond to environmental circumstances and work together to achieve the body's homeostasis. The SNS and PNS have different yet complementary functions: the SNS is involved in the functioning of the active body, whereas the PNS is involved in the functioning of the body at rest. Both systems operate automatically without the involvement of human consciousness.

The SNS originates in the thoracic and lumbar (middle and lower) regions of the spinal cord. Most sympathetic neurons are part of the peripheral nervous system. The peripheral nervous system mainly controls the functioning of internal organs and muscles in the periphery of the body. Through chains of sympathetic ganglia (nerve complexes), sympathetic neurons of the spinal cord connect to peripheral sympathetic neurons. This connection leads to the physiological reactions throughout one's body.

The primary function of the SNS is to prepare the body for action and stress. Known as the fight-or-flight system, the SNS is active in a state of arousal or emergency.



A diagram of the human sympathetic and parasympathetic nervous system. (ABC-CLIO)

Epinephrine and norepinephrine, hormones secreted by the adrenal glands (which are controlled by the SNS), help produce general arousal and emotional reactions. Other actions that occur when the SNS is aroused are increased heart rate, increased blood pressure, release of glucose by the liver (so that glucose may be used as an energy source), slowing down of digestion, dilation of the pupils, and other effects. Most of the physiological changes found in the state of arousal arise from SNS activity.

Experiencing a negative emotion (e.g., anger, sadness, fear) typically involves activation of the SNS; the stronger the emotion, the more intense the fight-or-flight response can be. In contrast, a negative emotion that appears to be associated with a different physiological response—that is, activation of the PNS—is disgust (Levenson, Ekman, & Friesen, 1990). The physiology of positive emotions may also differ from the general physiology of negative emotions. For instance, happiness is associated with both sympathetic and parasympathetic nervous system response (Levenson et al., 1990).

See also autonomic nervous system, hormones, negative emotions, parasympathetic nervous system, stress, stress hormones.

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Sympathy

Emotion scholars do not all agree about the meaning of sympathy. Some describe sympathy as a feeling of caring and empathic sadness for another person who is in distress (e.g., Eisenberg et al., 1989). Another way to describe it is to say that it may include any of a number of negative feelings (e.g., sadness, fear, worry, concern, or indignation) and/or behaviors (e.g., concerned facial expression, hugs) that one individual directs toward another who is suffering or experiencing bad fortune or trouble (Clark, 1999). According to both of these descriptions, sympathy occurs if another person is suffering or in distress. Other elements of the descriptions differ somewhat. One point of difference is whether sympathy must involve a feeling of caring; according to Eisenberg et al. (1989) caring is present, whereas in Clark's (1999) view, sympathy may be present without a feeling of caring toward the suffering individual. Additionally, according to Eisenberg et al. (1989), sympathy involves empathic sadness, whereas Clark (1999) says that sympathy may involve either negative feelings directed toward another (such as sadness), or sympathetic behavior; according to Clark, a person could behave in a sympathetic fashion without actually feeling anything, and this is still called sympathy.

According to Clark (1999), "getting to" sympathy is a process. First, an individual must take the perspective of another person. The next step toward sympathy is feeling the inner experience of the other person, especially her emotions, or acting on the cognitive understanding of the person's situation, without necessarily feeling anything—or both feeling and acting. According to the definition of Eisenberg et al. (1989), an additional step would be to care about the suffering.

If feelings of sympathy are present, they may be experienced in many ways. Sympathy may be felt as intense sadness for a friend [illegible] died. Another example is righteous anger on hearing about a case of ra[illegible] discrimination. Sympathy

may be a brief pang of uneasiness that the individual pushes away and forgets quickly. As mentioned, sympathy may or may not be translated into behavior. The sympathetic person may have sympathetic feelings, and do nothing. Or, she may engage in behavior ranging from empathic, supportive listening, to providing tangible expressions of sympathy such as sending cards or flowers, to behavior that may be costly in terms of energy and time invested, such as intervening on behalf of the person to help him to pursue a racial discrimination claim.

Clark (1999) discusses how societies vary in terms of average amounts of sympathy of their citizens. Additionally, rules for expressing sympathy are very particular to cultures. She briefly describes anthropologist Nancy Scheper-Hughes's depiction of a society in which little sympathy is present. In *Death without Weeping*, Scheper-Hughes (1992) recounts her experience with the Alto do Cruzeiro people of Brazil, who were so impoverished that they were not able to feed all their children. Fewer than half of the Alto children survived to adulthood. If an infant became sick, family members would not attempt to nurse the infant to good health, nor would they report feeling sympathy. Instead, they would give a greater share of food, clothing, and other necessities to healthier children. If an infant died, people would not cry when the infant was buried. Clark (1997) discusses the relationship between culture and sympathy in her book *Misery and Company: Sympathy in Everyday Life.*

See also culture, empathy, sadness, theory of mind.

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Systematic Desensitization

Systematic desensitization, developed by Joseph Wolpe (e.g., Wolpe & Lazarus, 1966), is a behavioral therapy that is used primarily to treat phobias (fears). The technique involves learning how to relax while gradually being exposed to a feared object or situation. Common phobias include fear of various animals, heights, blood, enclosed spaces, flying, and water, and systematic desensitization can be applied with any of these fears.

Treatment of the phobic client involves (1) training in a relaxation technique such as progressive muscle relaxation, relaxing imagery, or meditation; (2) the client's creation of an anxiety hierarchy, which is a list of feared situations, ordered from least fear inducing to most fear inducing; and (3) pairing the relaxation with the feared situations, beginning with the least fear inducing and gradually ending with the most fear inducing. The idea is that after treatment, the client will have a relaxation

response when encountering the formerly feared object or situation rather than a fear response.

Suppose a client is afraid of snakes. First, the client will be trained to relax. Next, he will produce an anxiety hierarchy, which might look something like the following:

10. I'm in a room that has an aquarium against the far wall. A snake is inside the aquarium. (least feared)
9. I'm in the room with the snake in the aquarium, and the snake is hissing.
8. I'm watching a documentary about snakes.
7. I'm watching the scary scene in *True Grit* (a John Wayne movie in which a character gets bitten by a rattlesnake).
6. I'm inside my house and saw a huge snake outside.
5. I'm outside, and a snake slithered within a few feet of me.
4. My cat brought what appears to be a dead snake into the house.
3. A snake is loose in the room in which I am sitting.
2. A snake slithered over my foot.
1. A snake is crawling on my neck. (most feared)

After constructing this hierarchy, the following procedure is implemented. The client is instructed to relax. Then, the client is exposed to situation 10 (least feared) on the anxiety hierarchy. This exposure can be real or in vivo (imagined). If the client is exposed to situation 10 and remains relaxed, the therapist will instruct him to move to situation 9. If the client becomes anxious at any point, he self-induces relaxation, or the therapist may induce relaxation. With each success, the client moves up the hierarchy toward situation 1 (most feared). Systematic desensitization may be of short duration, involving only 6 or so sessions, or longer lasting, up to 100 or more sessions, depending on the severity of the phobia, the number of phobias from which the client suffers, and other factors. This therapy is an effective treatment for phobias and is associated with improvement in most sufferers (Wiederhold & Wiederhold, 2005).

See also behavior therapy, exposure with response prevention, fear, phobia.

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T

Tarantism

Tarantism was a disease that afflicted people in some parts of Europe from about the 1300s through the 1700s. Symptoms included melancholy, delusions, hallucinations, stupor, and an uncontrollable need to dance. The illness was thought to be caused by the bite of the "tarantula" spider (actually a wolf spider, *Lycosa tarantula*, originally named "tarantula" but different from the tarantulas, *L. theraphosidae*, of which we speak today), and the only cure (it was believed) was to engage in the energetic dancing that the sufferer felt so strongly compelled to do. The common belief currently is that tarantism was psychologically caused. Another possibility is that it may have been caused by ingestion of a toxin.

The disease was centered in a city in southern Italy, Taranto. Both the disease and the spider were named for this city. Tarantism is an example of mass hysteria, which was relatively common during the Middle Ages and early part of the Renaissance. Another example of mass madness is the behavior and symptoms (e.g., "fits," hallucinations) exhibited by girls in Salem, Massachusetts, around 1691, which led to the infamous Salem witchcraft trials. Theories about causes of this behavior include convulsive ergot poisoning (caused by a mold that grows on rye) or encephalitis (Norton, 2003).

When mass hysteria occurs, large numbers of people share the same symptoms. There are usually a variety of somatic (physical) symptoms, including dramatic ones (e.g., excessive motor activity, hyperventilation, convulsions, fainting). Common characteristics of groups susceptible to mass hysteria include closely knit social groups, often united by strong religious beliefs, with atmospheres of tension and restraint, and those that have are paranoid or suspicious of outsiders or have a grudge against specific groups of people. Theories about causes of the behavior or outbreak included possession, poisoning (by a food or gas), or an epidemic infection (Trimble, 2004).

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Mexican Redknee Tarantula. One of the most sought after tarantulas due to its color and mild temperament. It will throw hairs from its abdomen when threatened. (iStockPhoto)

Franca Riela and Elvira Ferrara from Cantania, Sicily perform the Tarantella while on a pilgrimage to the Vatican City in Rome, October 3, 1950. The Tarantella, a frenzied, whirling dance, is believed to be derived from the frenzied dancing that was supposed to be a cure for the effects of a tarantula bite. (AP/Wide World Photos)

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Temperament

The word *temperament* is used in everyday language, referring to the characteristic behavior of a baby or child, or emotional qualities of a person of any age. This popular conception is similar to the way social scientists construe temperament. According to American psychologist Gordon Allport (1961), the father of trait psychology,

> Temperament refers to the characteristic phenomena of an individual's nature, including his susceptibility to emotional stimulation, his customary strength and speed of response, the quality of his prevailing mood, and all the peculiarities of fluctuation and intensity of mood, these being phenomena regarded as dependent on constitutional make-up, and therefore largely hereditary in origin. (p. 34)

Primary characteristics of this description are that temperament refers to attributes that (1) distinguish a person from other people, (2) are largely hereditary, and (3) are largely of an emotional nature. Although not explicit in Allport's definition, temperament is also presumed to be at least relatively stable over time, perhaps over most or all of a person's lifetime, just like other personality traits.

Developmental and personality psychologists have produced a number of different models for understanding the nature of temperament traits. Among the most well known is Thomas, Chess, and Birch's (1970) model. The researchers interviewed mothers of babies and identified three patterns of temperament. *Easy* babies typically express positive emotions, have emotional reactions that are low to moderate in intensity, and experience regular sleeping and eating patterns. *Difficult* babies are frequently in a negative mood, experience intense emotional reactions, and have sleeping and eating patterns that are irregular. *Slow-to-warm-up* babies possess combinations of the easy and difficult patterns. Their moods are relatively negative, their emotional reactions are low in intensity, and they will approach new objects or events only after an initial period of hesitation and timidity.

Other researchers (e.g., Buss, 1991) have argued that three particular traits—sociability, emotionality, and activity level—qualify as temperament traits because they appear to be present at birth and are stable across time. Long-term longitudinal studies, in which the same participants are researched over a period of time, have provided evidence for stability of sociability and emotionality. For instance, Caspi, Elder, and Bem (1988) studied very unsociable children and followed them for 30 years. They found general tendencies toward unsociable or shy behavior through adulthood. Men in the study took longer than other men to marry, become parents, and become stable in their careers. Women research participants were more likely than other women to choose a traditionally feminine life path, getting married, having children, and becoming homemakers. Chess and Thomas (e.g., Chess & Thomas, 1990) researched emotionality in a general sample of people for a period of 30 years, beginning in infancy. They found that most participants had established a general emotional pattern in the first few months of life and that the pattern continued through adulthood.

Many psychologists who study personality or emotion are convinced, based on the evidence, that people possess temperaments. Beginning in the 1990s, temperament research evolved in complexity; researchers now study the ways in which temperament and environmental factors interact to produce behavior. Researchers may now begin to address important clinical questions such as, "Under what circumstances will an impulsive child develop into an adult who channels impulses into productive (rather than destructive) behavior?" Circumstances that are studied could include general parenting styles, discipline styles, socioeconomic status, and so forth. Bates, Goodnight, and Fite (2008) review some of the research on temperament-environment interactions.

See also affective personality traits, attachment, extraversion, genetics, human development, neuroticism, personality, shyness.

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Greek physician Galen of Pergamum (AD 130–200) used the idea of the humors (bodily fluids) to explain individual differences in temperament or character. The four humors, and their associated characteristics, were sanguine (buoyant; blood), phlegmatic (sluggish; phlegm), choleric (quick tempered; bile), and melancholic (dejected; black bile). Physical and psychological characteristics were determined by the balance of the four humors, which were understood in terms of a general cosmological theory in which fire, earth, air, and water were the four basic elements of all things. From Galen's ideas, theories of personality types emerged in the 18th and 19th centuries (Stelmack & Stalikas, 1991).

Thematic Apperception Test

The Thematic Apperception Test (TAT) was introduced by American artist Christiana Morgan and American psychologist Henry Murray in 1935. The TAT is a projective test that involves presenting people with ambiguous stimuli or situations

(e.g., inkblots, pictures of people interacting, incomplete sentences, etc.) and asking for responses (e.g., telling a story, completing a sentence, drawing a picture, etc.). Projective tests may be used to assess any of a wide variety of psychological attributes, including general personality traits, needs, unconscious conflicts and defenses, general psychological adjustment, and psychiatric disorders.

The TAT was the brainchild of Murray, who wished to measure people's fantasies and other deeply hidden characteristics. Prior to deciding on the TAT as his method, he had experimented with other approaches, for instance, an odor imagination test, in which assessees (people taking a test) sniffed a variety of substances and were asked to create anecdotes based on the odors, and a musical reverie test, wherein assesses sat in a comfortable chair, listened to classical music, and were asked to "allow their minds to drift."

The TAT consists of 31 cards depicting scenes involving individual people, people interacting, or objects. To select the pictures, Murray, Morgan, and other staff members of the Harvard Psychological Clinic (where Murray worked as a professor) looked through magazines. About 2,000 photographs and illustrations were chosen and were shown to students, colleagues, and family members to evaluate the illustrations' capacity to evoke fantasies. After 29 were selected, Morgan redrew them and pasted them to cardboard. The remaining two were original art work by Morgan and a blank card. Some examples of TAT pictures are a boy sitting down at a table, looking at a violin placed on the table; a close-up of two faces, one older and one younger, with ambiguous expressions; and a muscular man climbing up a rope.

Clinical psychologists administering the TAT typically choose 5 to 12 cards for a particular assessee. During administration the assessor presents the cards one at a time, with instructions to tell a story that describes what is happening now, what happened before, and what will happen next. The assessor writes down what the assessee says verbatim or tape-records the session. The resultant 5 to 12 stories are interpreted. TAT interpretation is generally loose, but typical aspects that might be evaluated are needs, motives, and themes of relationships with people.

The TAT has been criticized for lack of reliability (consistency) of administration and scoring (e.g., Lilienfeld, Wood, & Garb, 2000, 2001). Although some standardized administration and scoring systems exist, research suggests that most psychologists do not utilize these systems, but rather, interpret in an impressionistic fashion, based on their own intuitions. For instance, in a study of 100 North American psychologists who practice in the court systems, only 3 percent said that they used standardized scoring (Camara, Nathan, & Puente, 1998). Lilienfeld and his colleagues also conclude that the TAT has not yet demonstrated validity for identifying any particular psychological attributes, although two areas are promising. Specifically, the TAT may do a good job of assessing achievement motivation and an individual's typical ways of perceiving others (called *object relations*).

The TAT is a popular test among clinical psychologists, ranking in the top 10 in frequency of use (Camara, Nathan, & Puente, 2000). The only projective test that is more frequently used is the Rorschach Inkblot Test. Although the TAT has been criticized along with other projective tests, the ongoing research may provide solid evidence for its utility and validity for some purposes. Additionally the TAT has expanded in use; marketing researchers have found that it can be helpful in identifying effective forms of advertisement (see Soley & Smith, 2008).

See also Children's Apperception Test, defense mechanisms, projective test, psychoanalytic perspective, Rorschach psychodiagnostic technique, the unconscious mind.

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Theory of Mind

Theory of mind (ToM) refers to the ability to infer the emotional state, beliefs, desires, or intentions of others from nonverbal signals (e.g., facial expressions or body language) or linguistic cues (prosody). This awareness of another's perspective is related to social cognition which is found in normally developing humans, other primates (e.g., chimpanzees and orangutans; Call & Tomasello, 1998), and some other animals (e.g., dogs; Horowitz, 2009). Sometimes referred to as *mind-blindness*, ToM deficits describe an inability to take another person's perspective. Individuals with a ToM deficit may have difficulty determining others' intentions, understanding how their own behavior affects other people, or have a difficult time with social reciprocity. *Social reciprocity* is involved in activities such as taking turns when playing games or engaging in conversation.

ToM research burgeoned after the 1978 publication of an article by American psychologists David Premack and Guy Woodruff ("Does the Chimpanzee Have a Theory of Mind?"). Both an understanding of attention in others and awareness of others' intentions are precursors to development of ToM. Normally developing human infants usually understand attention in others by seven to nine months of age. An understanding of others' intentions or goals may also be a precursor to ToM; this understanding has been observed in children ages two and three years (Call & Tomasello, 1998). Empathy is a concept related to ToM. It may be necessary to understand that other people have their own thoughts, emotions, and intentions before being able to put oneself in another person's shoes. ToM deficits are a key characteristic of individuals

with autistic spectrum disorders (ASD), including Asperger's syndrome. However, this does not mean that people with ASD do not experience emotions, including empathy. ToM deficits have also been observed in individuals with schizophrenia (Phillips, Drevets, Rauch, & Lane, 2003) and have been posited in some cases of bipolar disorder and dementia (Brüne & Brüne-Cohrs, 2006).

There are several types of tasks or tests to determine whether an individual has ToM. In the *false-belief task*, test subjects are told a story involving two characters. In an example of the false-belief story, there are two children in a room (Bob and Anne), two containers (a box and a basket), and a marble. Bob places the marble in the basket, then leaves the room. While Bob is gone, Anne moves the marble from the basket to the box. Bob returns. The examiner asks the test subject where Bob will look for the marble. The test subject passes the task if he or she says that Bob will look in the basket for the marble. Someone without this ability might answer incorrectly that Bob will look for the marble in the box (where the marble has actually been moved). To pass the false-belief task, an individual needs to understand that Bob does not know about the marble being moved from the basket to the box. The *appearance-reality* task test subjects are shown a box that has a label (for example) with a picture of candies. The test subject is asked what he or she thinks is in the box. The test subject answers correctly, "candies." Then the examiner opens the box and shows that it actually contains pencils. The experimenter closes the box and asks the test subject what another person, who has not been shown the true contents, will think is in the box (the correct answer is "candies").

A drawback with many ToM tests is that it is difficult to distinguish between language abilities, desire for social interaction, and ToM. There is a strong relationship between the development of language abilities and ToM abilities. It has been found that Deaf children—even those with language delays (sign language or oral language)—develop ToM abilities similar to those of hearing children. This is not true for children with autism, who exhibit significant deficits in ToM abilities (Astington & Baird, 2005). It may also be difficult to discern ToM abilities in individuals who have little or no interest in social interactions, which is the case with many individuals with autism. Behaviors such as pretend play and imitation have been associated with the development of ToM. While it was previously thought that an individual either had or did not have ToM, ToM deficits may exist on a continuum: an individual may have deficits to some degree in some areas, while being capable in other areas.

Special types of brain cells called *mirror neurons* may be involved in ToM abilities. It has been found that the mirror neuron systems of children with autism differ from those of typically developing children, and are associated with deficits in imitation, ToM, and social communication (Dapretto et al., 2006).

See also autistic spectrum disorders, body language, empathy, facial expressions, human development, primates, schizophrenia, sympathy.

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Thought Control Questionnaire

All people experience some thoughts that they regard as unpleasant and unwanted, and for most people such thoughts can become highly distracting at certain points during their lifetimes. Thoughts can be disturbing enough to reach a clinically significant level, forming a major component of a number of psychiatric disorders, including major depression, eating disorders, substance-related disorders, and anxiety disorders such as obsessive-compulsive disorder and posttraumatic stress disorder.

In 1994, British psychiatrists Adrian Wells and Mark Davies published the Thought Control Questionnaire (TCQ) to assess ways people cope with unwanted, intrusive thoughts. To identify common thought control strategies that people use for unwanted thoughts—information that would be used to create the items for the TCQ—the researchers conducted interviews with two groups of people: patients diagnosed with an anxiety disorder or hypochondriasis and nonpatients who had no history of treatment for psychiatric disorders.

Wells and Davies initially identified 59 techniques that people use to control unwanted thoughts. They conducted further research and utilized a statistical procedure called *factor analysis*, designed to summarize information, on the 59 items and determined that 30 items should be retained for the final questionnaire. The 30 items were grouped into five categories of thought control: *distraction* (e.g., I think about something else), *social control* (e.g., I don't talk about the thought to anyone), *worry* (e.g., I think about past worries instead), *punishment* (e.g., I punish myself for thinking the thought), and *reappraisal* (e.g., I try to reinterpret the thought).

In their original study on these thought control techniques, Wells and Davies found that two of the categories, worry and punishment, were broadly associated with mental disorders or emotional vulnerability. Later research conducted by Fehm and Hoyer (2004) led to the same general conclusions. The TCQ is used in clinical assessments but is not yet used widely in research; Fehm and Hoyer (2004) suggest that the utility of this measure is likely to increase if some modifications are made to instructions and to the items themselves. Research on the various thought control strategies may eventually lead to a better understanding of the broad functionality or dysfunctionality of

different techniques. Additionally, certain techniques may be helpful in certain situations or for certain people, but not for other situations or people. At this point, much remains unknown about the particular benefits and shortcomings of specific thought control strategies.

See also anxiety, obsessive-compulsive disorder, generalized anxiety disorder, posttraumatic stress disorder, regulation of emotion, thought stopping.

Further Reading:

TCQ from Mental Health Nurse: www.mentalhealthnurse.co.uk/images/Assessment%20Tools/Thought%20Control%20Questionnaire.pdf

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Thought Stopping

Thought stopping is a simple coping technique whereby one consciously stops negative thoughts that occur. When a person has a run or chain of negative thoughts, he says to himself, "Stop!" then shifts his thoughts to something different. The bothersome thought may occur again (perhaps immediately), and the individual repeats the technique. Thought stopping can be helpful for a variety of negative ruminations. It can be used with the self-disparaging ideation from which some people frequently suffer (such as saying to oneself, "I'm ugly," "I'm worthless," and "I'm such a loser"). The approach is also helpful with obsessive anxiety, for example, continuously worrying about the children while on a dinner date with your spouse (and effectively ruining the dinner) or obsessive thoughts of anger or revenge wherein a person cannot stop thinking about the wrongs that her boss inflicted on her. Other examples of situations that can be alleviated with thought stopping include depression, smoking, and phobias.

Thought stopping was popularized by Wolpe and Lazarus in their 1966 book *Behavior Therapy Techniques.* The authors state that the technique was introduced by J. G. Taylor in 1955. On the basis of research results indicating enhanced effectiveness, when implemented, thought stopping may also include utilizing a relaxation technique (such as deep breathing or muscle relaxation) prior to saying "Stop!" McKay, Davis, and Fanning (2007) have written a well-received workbook, *Thoughts & Feelings: Taking Control of your Moods & your Life*, that describes numerous general stress management, cognitive, and behavioral techniques, including thought stopping, as methods for coping with negative thoughts and feelings.

See also anxiety, behavior therapy, cognitive therapy and cognitive-behavioral therapy, deep breathing, depression, Arnold A. Lazarus, progressive muscle relaxation, regulation of emotion.

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Transference

Transference is a phenomenon in which a patient in therapy projects feelings onto the therapist. For example, a patient may feel dependence, rebellion, hatred, resentment, or sexual feelings toward the therapist or may feel rejected or judged by the therapist. In psychoanalysis (Freudian psychotherapy), this is thought to reflect feelings the patient has experienced in earlier significant relationships. Transference feelings may be a reflection of conflicts experienced with a parent, sibling, employer, or significant other. Transference feelings may be disturbing, and the patient may blame distressing feelings on the therapist. Identifying and working through transference allows the patient the opportunity to develop insights about patterns of interaction and to change these patterns in subsequent relationships. Transference feelings may occur in many relationships, not just in therapy, when attitudes and feelings about people or situations from the past are unconsciously transferred to another person or situation in the present (Jones, 2005).

Sigmund Freud first described transference in 1905 and noted it as an essential part of the psychoanalytic process (Clarkson & Nuttall, 2000). While many different types of therapy are attuned to the interactions and relationship between therapist and client, not all believe that transference is essential to the therapeutic process (Clarkson & Nuttall, 2000). From a psychoanalytic perspective, it is believed that unconscious feelings affect behavior. *Resistance* is a defense mechanism that protects the ego (conscious part of the psyche) by keeping upsetting material out of the conscious mind (repressed). By working through feelings of transference and resistance, the patient may discover and acknowledge unconscious feelings and be freed from the effects of unconscious feelings on future behavior. By maintaining a neutral stance, the therapist becomes a blank screen onto which the patient can project feelings. The psychoanalyst analyzes and interprets the psychological meaning behind repressed material and transference feelings.

Countertransference describes feelings the therapist may project onto the patient. For example, if the therapist begins to have strong feelings of annoyance or irritation toward a patient, it may be because the patient reminds the therapist of a previous troublesome relationship (e.g., with a family member). The manner in which the patient interacts with the therapist may set off unconscious response patterns in the therapist. It is important for the therapist to acknowledge feelings of countertransference and to work through these feelings. Dealing with countertransference allows the therapist to regulate his emotions within the therapeutic relationship and may provide insight into the client's issues. If therapeutically appropriate, countertransference issues may be dealt with directly with the patient. For example, the therapist may say to the patient, "When you say things in that manner, I feel ——." However, it is better to handle some types of countertransference, such as feelings of sexual attraction for a patient, outside the therapeutic relationship. Some therapists consult with

their own therapists, with whom they can discuss these feelings. Unresolved transference or countertransference can cause misunderstandings and damage the therapeutic relationship.

See also defense mechanisms, Sigmund Freud, psychoanalytic perspective, psychodynamic psychotherapy and psychoanalysis, the unconscious mind.

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Traumatic Brain Injury

Traumatic brain injury (TBI) is a type of brain injury that occurs when an external trauma damages the brain, resulting in neurological dysfunction. TBI may be caused if the head suddenly and violently strikes an object (e.g., from a fall or car accident) or if an object pierces the skull and enters the brain (e.g., a gunshot). Other types of brain injury (e.g., acquired brain injury) may be caused by disease (e.g., meningitis), surgery, toxins, anoxia (e.g., lack of oxygen resulting in cerebral palsy), or stroke. Shaken-baby syndrome is a severe form of physical child abuse caused by vigorously shaking an infant or small child (up to five years of age), causing bleeding in the eyes or brain. Shaken-baby syndrome can result in developmental delays, cognitive impairment, paralysis, severe motor difficulties, spasticity, blindness, seizures, or death. Boxers and football players may sustain a type of TBI known as *dementia pugilistica* (which used to be called *punch drunk*). Now referred to as *chronic traumatic encephalopathy*, it is caused by repeated blows to the head (Masel, 2009). Repeated mild TBIs occurring over months or years can result in cumulative neurological damage and cognitive impairment; occurring over a period of days or weeks, TBI can be fatal (National Center for Injury Prevention and Control [NCIPC], 2009).

TBI severity can be mild, moderate, or severe. With mild TBI, a person may remain conscious or lose consciousness briefly (for a few seconds or minutes). Mild TBI symptoms may include headache, confusion, dizziness, lightheadedness, vision changes (e.g., blurred vision or tired eyes), ringing in the ears, bad taste in the mouth, fatigue, lethargy, change in sleep patterns, mood swings, cognitive difficulties (e.g., trouble with memory, concentration, attention, or thinking), and changes in behavior (National Institute of Neurological Disorders and Stroke [NINDS], 2009). In addition to these symptoms, moderate or severe TBI may result in headache that gets worse or does not go away, repeated vomiting or nausea, seizures, inability to awaken from sleep, dilation of the pupils, slurred speech, weakness or numbness in the extremities, loss of coordination, increased confusion, restlessness, or agitation. Symptoms may not manifest for days or weeks following the injury (NINDS, 2009).

In the United States, 1.4 million people sustain a TBI each year. Of these, 4 percent die, 17 percent are hospitalized, and 79 percent are treated in an emergency room and released. The leading causes of TBI are falls (28%), motor vehicle crashes (20%), struck by/against accidents (colliding with a moving or stationary object; 19%), and assaults (11%). Males are 1.5 times more likely than females to sustain a TBI. Those at highest risk of sustaining a TBI are those aged 0 to 4 years and 15 to 19 years. Firearm use is the leading cause of death from TBI. African Americans have the highest death rate from TBI (NCIPC, 2009).

TBI can result in many disabilities, including problems with cognition (e.g., thinking, memory, reasoning), sensory processing, communication, mental health (e.g., depression, anxiety, personality changes) and behavior (e.g., aggression, acting out, social inappropriateness). Serious head injury can result in *stupor* (an unresponsive state from which an individual can be aroused with a strong stimulus), *coma* (an unresponsive and unaware state), or *vegetative state* (unresponsive and unaware but continuing to have sleep-wake cycles and periods of alertness). A *persistent vegetative state* (PVS) is when an individual stays in a vegetative state for over a month. PVS is not the same thing as brain death, which occurs when the brain stem dies and all brain activity (including periods of alertness and wake-sleep cycles) ceases.

Prompt treatment of moderate or severe TBI may lessen severity of consequences or prevent further injury. Treatment focus is on stabilization to ensure proper oxygen supply (to the brain and the rest of the body), maintain blood flow, and control blood pressure. Imaging studies, such as X-rays, computed tomography (CT) scan, or functional magnetic resonance imaging (fMRI), can detect skull fractures and locate specific areas of injury in the brain. About half of individuals with severe TBI need surgery to repair hematomas (ruptured blood vessels) or contusions (bruised brain tissue; NINDS, 2009). Rehabilitation may include physical therapy, occupational therapy, speech and language therapy, physiatry (physical medicine), pharmacotherapy (medication), psychotherapy, and social support. The U.S. Centers for Disease Control (2006) estimates that at least 5.3 million Americans with TBI will have a long-term or lifelong need for assistance with activities of daily living (e.g., dressing, basic hygiene) because of their disability. TBI can cause seizure disorder and increase the risk for Parkinson's disease and Alzheimer's disease (NCIPC, 2009).

See also functional magnetic resonance imaging, mood swings, National Institute of Neurological Disorders and Stroke, Parkinson's disease, right hemisphere syndrome.

Further Readings:

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- When John Hinkley attempted to assassinate President Reagan in 1981, James Brady (U.S. White House press secretary) sustained a gunshot wound to the head, resulting in traumatic brain injury. Since the shooting, Mr. Brady has made great efforts lobbying for handgun control. The Brady Bill—a U.S. handgun control bill requiring a waiting period and background check before purchasing a handgun—was signed into law in 1993. Mr. Brady's head injury caused significant impairment, including difficulties with speech, paralysis affecting much of his body, and chronic pain (Winslade & Brady, 1998).
- *Locked-in syndrome* is a rare neurological disorder that may result from traumatic brain injury or stroke; it may also be caused by poison (e.g., tetrodotoxin from a puffer fish), circulatory system disease, medication overdose, or diseases that destroy the myelin sheath surrounding nerve cells. It causes complete paralysis of all voluntary muscles in the body, except those that control eye movement. People with locked-in syndrome are conscious but cannot speak or move; communication may be possible through eye blinks.

Tricyclic Antidepressant

When imipramine (Tofranil) was developed as an antipsychotic in the 1950s, it was also found to have antidepressant properties. This was followed by the development of amitriptyline (Elavil) and other cyclic antidepressants in the 1960s (Preston, O'Neal, & Talaga, 2008). The cyclic antidepressants include the tricyclics (TCAs; e.g., desipramine, Sinequan) and tetracyclics (e.g., amoxapine, Serzone, Trazodone). Heterocyclic antidepressants, which have molecular structures of three or more rings, include the tricyclics, which have three rings, and the tetracyclics, which have four.

TCAs are used to treat clinical depression and chronic pain. TCAs have also been used to treat obsessive-compulsive disorder, bipolar disorder, headache, bulimia, irritable bowel syndrome, narcolepsy, insomnia, persistent hiccups, pathological crying or laughing, smoking cessation, attention-deficit hyperactivity disorder, and panic disorders and as an adjunctive treatment for schizophrenia. The TCA opipramol (Neuraxpharm, Insidon) is used to treat anxiety. In addition to the TCAs, other types of antidepressants include monoamine oxidase inhibitors (MAOIs), selective serotonin reuptake inhibitors (SSRIs), seroto[illegible] and norepinephrine reuptake

inhibitors (SNRIs), norepinephrine reuptake inhibitors (NRIs), and atypical antidepressants.

The monoamine hypothesis—the main theory spurring development of TCAs—holds that the antidepressant effects are achieved by inhibiting the reuptake of specific neurotransmitters (such as serotonin and norepinephrine). These neurotransmitters are chemical messengers involved in communication between neurons in the brain. With reuptake, a neurotransmitter is absorbed (or recycled) back into a neuron and is no longer available for use. Inhibiting reuptake allows more of these neurotransmitters to be available for neurotransmission (Patterson, 2006). TCAs are being prescribed less often since the advent of effective SSRIs and atypical antidepressants, which can be more effective and have fewer side effects. However, TCAs are still useful for treatment-resistant clinical depression that has not responded to treatment with SSRIs.

Side effects of TCAs can be grouped into four categories: anticholinergic (e.g., dry mouth, dry skin, blurred vision, constipation), adrenergic (e.g., sweating, sexual dysfunction, sudden drop in blood pressure), antihistaminic (e.g., sedation, weight gain), and miscellaneous (e.g., lowered seizure threshold, cardiac arrhythmia, elevated heart rate, hepatitis, rashes, sweating, anxiety; Preston et al., 2008). The TCA iprindole can be fatal when combined with Ecstasy (MDMA). TCAs are very toxic—even small overdoses can be lethal. For this reason, it is not advisable to prescribe TCAs to individuals who are suicidal. *Serotonin syndrome*—a potentially lethal condition resulting from toxic levels of serotonin in the central nervous system—can be caused by combining antidepressants with each other or with some opioids (e.g., tramadol, fentanyl), antimigraine medications, stimulants (e.g., amphetamines, cocaine), psychedelics (e.g., MDMA), herbs (e.g., St. John's wort), and various other medications and over-the-counter products. Symptoms of serotonin syndrome may include rapid heart rate, sweating, shivering, dilated pupils, tremor or twitching, muscular rigidity, elevated temperature, confusion, agitation, delirium, hallucinations, coma, or death. Risk of taking TCAs while pregnant varies by medication. Some TCAs show evidence of maternal harm or harm to the fetus, and risk cannot be ruled out for other TCAs (Preston et al., 2008). To avoid potentially harmful side effects and drug interactions, health care consumers should be sure that their doctors and pharmacists are aware of *all* medications they are taking, including over-the-counter medications, herbs and natural remedies, and dietary supplements.

See also antidepressant, atypical antidepressants, depression, major depressive disorder, monoamine oxidase inhibiter, neurotransmitter, Prozac (fluoxetine), selective serotonin reuptake inhibitor, serotonin, St. John's wort.

Further Readings:

American Psychiatric Association—Healthy Minds Web site: http://www.healthyminds.org/
Depression and Bipolar Support Alliance Web site: http://www.dbsalliance.org/
National Alliance on Mental Illness Web site: http://www.nami.org/

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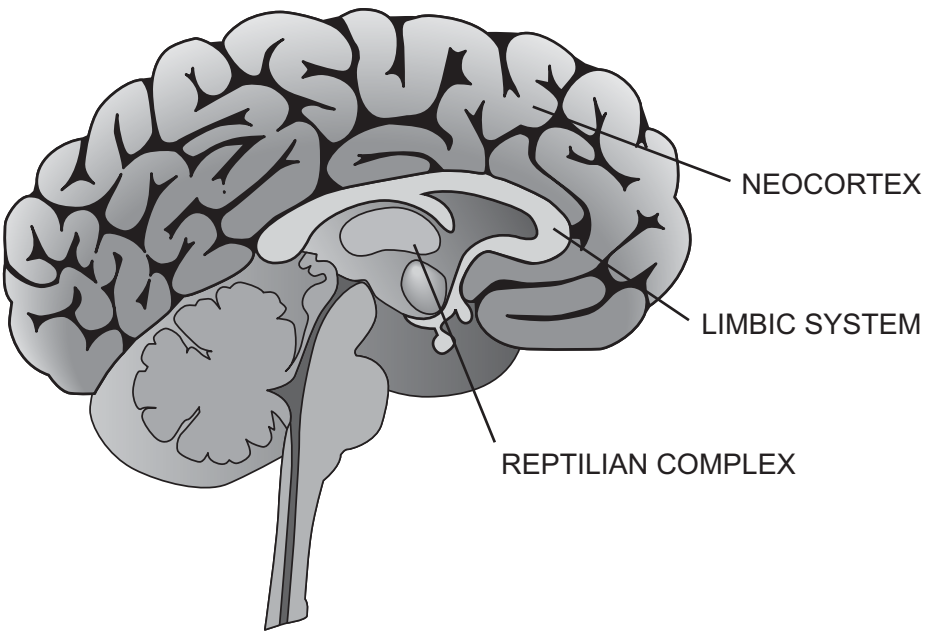
Triune Brain

In 1970, following about two decades of research, American physician and neuroscientist Paul MacLean introduced the triune brain theory (MacLean, 1970). This theory attempts to explain anatomy and functioning of the human brain (and brains of other animals) from an evolutionary perspective. MacLean proposed that the brain is actually three brains in one, each with its own particular type of intelligence, perception of time and space, memory, and other functions. The three layers of the brain each developed at different points in evolutionary history. The first layer, called the *reptilian brain* or *physical brain*, controls basic, immediate survival functions such as breathing and heart rate and survival-motivated behaviors such as food procurement and mating. All vertebrate animals have this layer of the brain, which developed first in evolutionary history. The second layer, called the *paleomammalian brain* or the *emotional brain*, and identified by MacLean as the limbic system, is present in mammals but not other vertebrates (fish, amphibians, reptiles, and birds), although the other vertebrates have some analogous structures. The final layer, called the *mammalian brain* or *thinking brain*, developed last and is involved in higher-level thinking and behavior, including problem solving, planning, language, and other functions. Only the more recently evolved mammals have this brain: humans, other primates, and advanced mammals.

The paleomammalian or emotional brain integrates sensory information coming from the external environment and sensations from inside the body and produces



The triune brain theory, introduced by Paul MacLean in 1970, proposed that the human brain is actually three layers that developed at different points in evolutionary history. (ABC-CLIO)

emotional feelings. In work that MacLean did prior to unveiling his triune brain theory (e.g., MacLean, 1949), he proposed that a particular brain structure, the hippocampus, was the central structure involved in this integration. MacLean had recognized that emotions can be experienced as "irrational" and that people are not always easily able to verbalize their emotions. (In fact, we often express our emotions by screaming, crying, and so forth.) He stated that the anatomy of the hippocampus does not allow for sophisticated (i.e., verbal) expression of emotion. Hippocampal nerve cells are large, crude cells, unlike the nerve cells of the thinking brain (cortex), which are more complex. Hippocampal cells can allow for representing information symbolically but not verbally. MacLean gives the example of representing the color red. The hippocampus could not conceive of it as a particular wavelength of light or a three-letter word but could perhaps associate red with blood, flowers, the sun right before nighttime, danger, and so on. Humans have a thinking brain but still also have an emotional brain. Therefore some, perhaps many, emotions are experienced in this crude, symbolic, nonverbal way.

Many brain experts and emotion scholars have agreed that many aspects of MacLean's theory are valid. LeDoux (1996) expressed his admiration of MacLean's work, stating that MacLean's theory was an outstanding synthesis of the most current research and knowledge in brain science, psychology, and psychiatry at the time. LeDoux agrees that an emotional brain exists similar to the way that MacLean described it, except that based on research evidence, MacLean's concept of the emotional brain is probably too simple. That is, when researchers have attempted to find the emotional brain using MacLean's thesis—that scientists should be able to locate the emotional brain based on knowledge of how the brain evolved—this has worked out well sometimes and not so well at other times. Supporting MacLean's thesis, the amygdala, which is located in the appropriate area of the brain to qualify as an emotional brain structure, has clear emotional functions. For instance, the amygdala is active when people see fearful facial expressions on other people (Breiter et al., 1996), and depressed people have elevated activity in their amygdalas (e.g., Nofzinger et al., 1999). However, some of the areas that MacLean originally identified as the emotional brain or limbic system appear to have little to do with emotion. For instance, the hippocampus is associated primarily with memory functions rather than with emotion (e.g., Eichenbaum, Otto, & Cohen, 1992). LeDoux (1996) discusses other criticisms and support for MacLean's theory, particularly in regard to the emotional brain concept. MacLean's theory has inspired large amounts of research and further thinking on the functions of various parts of the brain, on the emotional brain in particular, and on the way that evolution is related to brain function. As LeDoux (1996) says, however, a more complex model is needed to more fully understand the emotional brain.

See also amygdala, hippocampus, hypothalamus, limbic system, physiology of emotion.

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Trust

Trust is an individual's collection of expectations that another individual or group of individuals will behave in favorable and accepting ways toward him. When trust is present, an individual can have faith that the trusted one will take care not to harm him. Trust can be selective, with an individual trusting one individual or group in some contexts and other individuals or groups in other contexts.

Mutual trust is essential for the effective functioning of both individual relationships and of social groups, including whole societies. At the societal and social group level, trust allows the group to develop and increase in complexity; conversely, societal or group development is hindered without trust. At the most fundamental level, trust is necessary for the initial formation of a group, and later, trust impacts the group's ability to solve problems collectively. In our evolutionary history, we faced many threats and hardships such as need for shelter, need for food and other resources, and need for protection against the elements, predatory animals, and perhaps other humans. Gathering together in groups and forming societies created superior protection for people. Many trust scholars therefore make the argument that the human capacity for trust enhances survival, and we can reasonably assume that this capacity developed through natural selection (e.g., Couch, 1999).

Not only is trust valuable for forming social groups, it is also valuable for the formation of bonds in intimate relationships. According to research by Wilson and Carroll (1991), trust is necessary for self-disclosure, which in turn is necessary for the development of intimacy. A number of scholars have theorized about the way that trust originates and develops in an individual. For instance, German-born American psychologist Eric Erikson (1950) and British psychiatrist John Bowlby (1973) emphasized that trust begins to develop in infancy through interactions with one's caregivers (usually the mother and father). According to Erikson, trust arises when the caregiver reliably and appropriately responds to the needs of the infant. For instance, if the infant is crying because she is hungry, feeding the infant will help her to feel trust. Trust will develop over time with many need-satisfying interactions with the caregivers. Conversely, if the caregiver does not respond appropriately to the baby's needs, for example, through responding as if the need were [illegible] (e.g., changing the diaper when the baby is crying because of hunger), or if the caregiver is neglectful toward

the infant, mistrust develops. Erikson pointed out that no parent is perfect, and therefore some mistrust will develop in all infants. Furthermore, some degree of mistrust is healthy for individuals. If people fail to develop an awareness that others could hurt or disappoint them, this creates vulnerability. The ideal development is one is which both trust and mistrust develop, with a higher proportion of trust than mistrust.

According to Bowlby, development of trust is closely interconnected with the attachment relationship. Bowlby argued that a drive toward attachment is inborn and a survival mechanism. The attachment drive induces the infant to remain physically close to caregivers, who in turn will protect the infant from physical and psychological harm. In the infant's early interactions with caregivers, she receives information from caregivers about their responsiveness to her needs. The infant processes this information, developing an expectation about the future behavior (e.g., reliability, responsiveness) of caregivers. This expectation she has developed is a sense of trust. Furthermore, Bowlby states that the sense of trust with caregivers is generalized to other relationships; the child now has a general sense of trust of others. Future behaviors can and generally do impact the sense of trust; however, early information is most important because once a sense of trust has become a part of the child's worldview, future interactions are interpreted through this lens.

American psychologist Julian Rotter (1967) had a view similar to Bowlby's but with at least two major differences. Like Bowlby, Rotter believed that trust emerges and evolves through interactions with others. For Rotter, however, the "others" can be any social agents, including parents, other family members, peers, teachers, and so on. Similar to Bowlby's perspective, Rotter argued that a *generalized expectancy* regarding trustworthiness of others develops through experiencing positive and negative outcomes in interaction with others. Unlike Bowlby, however, Rotter stated that the generalized expectancy can come from another source: observing the behavior of others and hearing about the expectations of others. Therefore direct experience with others is only part of what creates trust; children and adults may also learn some of their attitudes about trust simply from hearing what others think or from observing the trustworthy or untrustworthy behavior of one person toward another.

Research has supported Erikson's, Bowlby's, and Rotter's claims that trust develops early in life and that this early trust concept possesses some stability and impacts later relationships. For instance, Ainsworth, Blehar, Waters, and Wall (1978) showed that infants can be identified as exhibiting different attachment styles that are differentially related to trust (i.e., the secure type experiences high trust and the anxious-ambivalent and avoidant types exhibit must less trust), and later research has shown that these attachment styles are stable over time and associated with relatively trusting or relatively untrusting romantic relationships in adulthood (see Grossman, Grossman, & Waters, 2005).

See also Mary D. Salter Ainsworth, attachment, John Bowlby, developmental crisis, emotional abuse, evolutionary psychology (human sociobiology), friendship, human development, intimacy, loneliness, relationships, social learning.

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- A lack of trust can cause someone to be suspicious of others and hinder development of meaningful social relationships. Extreme suspiciousness may rise to the level of paranoia, which is associated with some mental disorders (e.g., paranoid schizophrenia, paranoid personality disorder, and delusional disorder, persecutory type) and the use of some stimulant drugs (e.g., methamphetamine).
- Can someone be too trusting? Being gullible can make an individual vulnerable to being taken advantage of. Gullibility can make one prey to cults, scam artists, and more likely to believe urban legends, Internet rumors, and pseudoscientific claims. In 1997, 14-year-old Nathan Zohner won a junior high school science fair for a project called "How Gullible Are We?" Zohner had circulated a report to other students warning of the dangers of the chemical dihydrogen monoxide. He said that this chemical caused excessive sweating, was lethal if inhaled, and caused erosion. He was asking what should be done about it. Most students favored banning the substance; only one correctly identified it as water (H_2O). For more about gullibility, see Valhouli (n.d.).

12-Step Programs

Alcoholics Anonymous (AA), founded in 1935, was the first 12-step program. In the 12 Steps of AA, the first step is admitting that there is a problem: that one is powerless over alcohol (or another addiction). The second and third steps are spiritual in nature; believing that a higher power (of one's own understanding) can help relieve one's problems (i.e., alcoholism or other addiction) and deciding to turn one's life over to the care of that higher power. In the fourth and fifth steps, one creates and shares a list of one's behaviors with another person. Then, in the sixth and seventh steps, one identifies what personal characteristics (referred to as shortcomings) have contributed to the behaviors recounted in the fifth step inventory and asks one's higher power to remove those shortcomings. The eighth and ninth steps involve making amends (e.g., apologies and reparations) to people one has harmed. The 10th step is a maintenance step, involving examining one's behaviors and making any necessary amends

on a daily basis. The 11th step involves maintaining contact with one's higher power through daily meditation and prayer. The 12th step involves giving back to others recovering from alcoholism through service (e.g., sponsoring others, sharing the AA message, or doing service in AA groups).

All subsequent 12-step programs are based on modified versions of AA's 12 Steps. Many 12-step programs also incorporate AA's 12 Traditions, especially the principle of anonymity at the public level.

Twelve-step programs established to help people with addictions, behaviors, or issues other than alcoholism include Narcotics Anonymous (established in 1953), Gamblers Anonymous (1957), Overeaters Anonymous (1960), Debtors Anonymous (1968), Emotions Anonymous (1971), Sexaholics Anonymous (1979), Cocaine Anonymous (1982), Recoveries Anonymous (1983), Workaholics Anonymous (1983), and Obsessive Compulsive Anonymous (1988). Twelve-step programs established to help support the family and friends of people with addictive or disordered behaviors include Al-Anon and Alateen (1951), Nar-Anon (for families of addicts, 1968), Adult Children of Alcoholics (established in 1978), Co-Dependents Anonymous (1986), and Families Anonymous. As long as enough people share a particular addiction, behavior, or mood problem and want to form support groups to help each other recover from their mutual problem, there is a 12-step program for them.

The 12-step programs emphasize that they are spiritual rather than religious. However, some people seeking recovery from alcoholism or other addictions are put off by the concept of a higher power (referred to as God in several of AA's 12 Steps). Other people do not believe that it is necessary or desirable to admit powerlessness (part of AA's first step) to recover. People seeking a nonspiritual mutual-help approach to recovery from alcoholism and drug addiction established Secular Organization for Sobriety (SOS) and LifeRing as alternatives to 12-step programs. Other alternatives include self-recovery methods that do not involve group meetings such as the method espoused by Rational Recovery.

See also Al-Anon and Alateen, alcohol abuse and alcoholism, Alcoholics Anonymous, Emotions Anonymous, Narcotics Anonymous, Overeaters Anonymous, Sex and Love Addicts Anonymous, substance abuse.

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Type A Behavior Pattern

A Type A behavior pattern is a cluster of personality traits identified by American cardiologists Ray Rosenman and Meyer Friedman in the early 1960s. In their medical practice, they observed that their patients manifested behaviors and attitudes that distinguished them from other people; specifically, they appeared anxious, focused on their work lives and achievement, and overly concerned with time. In 1974, Rosenman and Friedman formally identified this personality pattern as one

they began to suspect was a risk factor for coronary heart disease. Characteristics of the Type A personality are (1) achievement orientation; (2) aggressiveness and competitiveness, sometimes turning into hostility; and (3) time urgency. Time urgency is a cluster of three subtraits: (1) multitasking (doing more than one task at a time), (2) time urgency (overconcern with time such that one has to be in the fastest line at the grocery store, the fastest driver on the highway, etc.), and (3) chronic activation (a continual state of being keyed up or physiologically aroused, creating an appearance of anxiety or intensity in the individual).

Friedman and Rosenman (1974) discussed a series of studies investigating 3,411 men over a number of years. Results of the research indicated that the Type A behavior pattern preceded the diagnosis of coronary heart disease in 72 to 85 percent of research participants. Leading cardiologists found these results strongly suggestive, if not convincing, which led to the question of mechanism: how might Type A personality cause or contribute to heart disease? By the 1990s, researchers (see Cooper, 1995; Williams & Williams, 1993) found that individuals with the Type A behavior pattern have sympathetic nervous systems (SNS) that are more reactive to stimuli than people who possess none of the Type A traits. Greater SNS activity, which occurs with the stress response, is associated with a variety of symptoms that predispose individuals to heart disease such as increased blood pressure, elevated cholesterol levels in the blood, and decreased flexibility of the blood vessels.

Further study of the Type A behavior pattern has led many to conclude that only one Type A component is reliably associated with heart disease. The primary pathogenic component is anger/hostility (e.g., Miller, Smith, Turner, Guijarro, & Hallet, 1996). The hostility component of Type A can be reduced through counseling or therapy, and reducing hostility can decrease the severity of future damage to the cardiovascular system (e.g., Friedman et al., 1996). At present, researchers disagree over whether the time urgency component also increases heart disease risk (Girdano, Dusek, & Everly, 2009).

See also anger, stress, stress hormones, sympathetic nervous system.

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American cardiologists Ray Rosenman and Meyer Friedman first got the idea about Type A personality when a worker repairing the upholstery on their waiting room chairs commented that the upholstery only seemed to be worn on the front of the seats. After further observation, Rosenman and Friedman realized that many of their patients were anxious and had a hard time sitting still; they were literally sitting on the edges of their seats! These informal observations led to more detailed study and discovery of the Type A personality (Griffin & Moorhead, 2009).

U

The Unconscious Mind

Emotional aspects of the unconscious mind have been of concern to researchers and theorists in diverse fields, including clinical/personality psychology, evolutionary biology, and social psychology. Although the idea of an unconscious mind can be traced to the ancient Greeks, in more modern times, the concept was popularized by Sigmund Freud from the clinical/personality psychology perspective and by Charles Darwin and others from the evolutionary perspective (Bargh & Morsella, 2008).

The unconscious mind is a central idea in Freudian theory and permeates his writings. In one of Freud's early publications, *Studies on Hysteria*, coauthored with Josef Breuer in 1895, the authors discussed several case histories illustrating the power of the unconscious mind. Their central theme was that the intense suffering of the mentally ill patient is caused by her inability to face personal characteristics or realities that may generate disturbing emotions such as shame, guilt, fear, or self-loathing. One patient described in the book, Katharina, suffers a variety of anxiety symptoms, including panic attacks, vomiting, and a feeling of suffocating. In therapy with Freud, she accepts what she has been repressing for a number of years: her father had attempted to molest her when she was a child. Because this memory caused her pain, she had repressed it into the unconscious mind for several years. Furthermore, Freud suggests, when Katharina became an adolescent, she was better able to understand what her father had been trying to do to her. At that point, she felt some attraction to her father but was horrified by that feeling and had to repress her own attraction as well. Thus the unconscious, which included the disturbing memory and her own feelings of attraction, expressed itself through her symptoms. In therapy with Freud, she was able to accept the memory and her own feelings, and her symptoms were relieved.

In another early case, the patient, Fräulein Elizabeth, was (unconsciously) in love with her brother-in-law and at some level wished that her ill sister would die. These thoughts and feelings distressed her intensely, so she repressed them. The unconscious mind produced symptoms, including intense leg pain, as a way of expressing the forbidden emotions. In Freud's theory, the unconscious mind is composed of disturbing mental products such as thoughts, emotions, memories, and impulses.

The unconscious mind must find a manner of expression, and the expression must be indirect or disguised so as not to reveal the unconscious contents. The expressions may take many forms, including symptoms, dreams, slips of the tongue, jokes, projection of one's characteristics onto other persons, and artistic productions. According to Freud, the key to a cure for a mentally ill person is knowing oneself, or bringing the unconscious mind into consciousness. When one is aware of her emotions, thoughts, impulses, and so on, she can consciously decide how to express them rather than passively allowing the unconscious mind to have control.

Another perspective on the unconscious mind was introduced by evolutionary biologists, including Darwin (1859) in *On the Origin of Species by Means of Natural Selection*, and was further elaborated by Dawkins (1976) in *The Selfish Gene.* According to this perspective, characteristics that enhance the survival of the organism will likely survive themselves. For example, if an individual tends to emotionally bond with other humans and this emotional bonding enhances his survival, then the characteristic "tendency to bond emotionally" will likely survive. Many of our inherited characteristics are preferences or feelings for or against something (emotions). As another example, people who naturally feared snakes may have been more likely to survive than people who did not. The individual person may not know why he dislikes snakes. More precisely, he may not even always know that he *does* dislike snakes but may simply try to avoid them. These preferences and dislikes (which we could call *approach tendencies* and *avoidance tendencies*) can certainly operate at a level that is below consciousness, or unconscious. In the evolutionary biology point of view, most animal (including human) behavior is caused by motives that are not conscious (unconscious). As our characteristics have evolved, there is no requirement that we are aware of their utility or even of their existence.

A third perspective on the unconscious mind comes from social psychologists. The relevant social psychology field is called *social cognition*, which focuses on our attitudes, judgments, and decision-making processes about social affairs. Topics included in this field are prejudice, persuasion (including how advertisements persuade people to buy products), group decision making, conformity, and attraction and relationships. Research has focused on the degree to which people are aware of aspects that influence their decisions and of the reasons for their behavior. A review of this research concluded that the unconscious mind significantly and powerfully affects people's experiences, decisions, and judgments in the social realm (Bargh, 2007). Chen, Fitzsimons, and Andersen (2007) reviewed research and theory on how the unconscious influences our close relationships. Unconscious factors may affect each major phase of a relationship, from the initial attraction to experiences and behaviors that occur in a well-established relationship to the way that we feel and behave when ending a relationship.

Historically, psychology has tended to focus on consciousness and conscious processes and has relatively neglected unconscious processes. Conversely, the perspective of evolutionary biology has always been that in the animal kingdom, unconscious causes of behavior are predominant. The unconscious mind has gained a new respect in psychology as well.

See also ambivalence, appraisal, conditioned emotional response, Charles Darwin, defense mechanisms, evolutionary psychology (and sociobiology), Sigmund

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Universal Signals

Famed emotion researcher Paul Ekman (1984) originated the concept of universal signal to describe his supposition that each distinct emotion has a distinct universal signal, or sign, that reveals its presence. The signal is communicated in various modes through facial expression, voice, and possibly others ways such as posture or body movement.

Interrelated with and fundamental to Ekman's discussion of universal signals were Ekman and colleagues' arguments that emotions are universal or common across cultures. Ekman and Friesen (1975) presented evidence that at least six emotions are present across cultures, with highly similar or identical facial expressions: happiness, sadness, fear, anger, disgust, and surprise.

Ekman (1999) states that these hypothesized universal signals have a function, which is to aid in the development and regulation of interpersonal relationships. Universal signals convey a great deal of information to the perceiver in a highly efficient way. Ekman (1999) used the specific example of disgust to illustrate his point. He said that when we see a person with a disgust expression, we already know that the person is reacting to a stimulus that is distasteful in taste or smell (or could be morally distasteful); the person may produce vocalizations such as "yuck," and the person will likely turn away or move away from the offensive source. Ekman gives some examples of the association between nonverbal emotional expressions and interpersonal relationships. For instance, facial expressions are likely crucial in the formation of attachments between infants and caregivers and between romantic partners. As another example, people who suffer from facial paralysis since birth report that forming and maintaining interpersonal relationships, even casual ones, is difficult, and they have attributed this difficulty to their inability to produce facial expressions.

Ekman (1984, 1999) discussed detailed aspects of his theory of universal signals, addressing many questions that might be asked by a skeptic. For instance, he explained that sometimes the emotional signal may not be present, even when the

individual is experiencing the emotion, because an individual can often intentionally suppress this signal. Conversely, he explains that emotional expressions can be simulated in ways that are convincing.

See also basic emotions, body language, culture, display rules, Paul Ekman, facial expression, nonverbal expression, primary emotions, relationships, vocal expression

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V

Valium

Before the 1950s, the medications most commonly used to treat anxiety conditions were the barbiturates (sedative-hypnotics). Their use involves relatively high risk because of their side effects, which include extreme drowsiness, high potential for physical dependence, and risk of overdose that can lead to death. In the late 1940s, pharmaceutical treatment of anxiety was improved with the development of a new sedative-hypnotic, meprobomate (brand name Miltown), which tends to have fewer side effects than the older drugs of its type.

In the 1950s, benzodiazepines—a superior type of antianxiety medication (anxiolytic)—were discovered. Dr. Leo Sternbach, a chemist from Croatia who was working at the Hoffmann–La Roche laboratories in Nutley, New Jersey, developed the first benzodiazepine in 1954. Sternbach had originally been working with this group of chemicals in the 1930s in Poland and then had abandoned his work. He resumed his work at Hoffman–LaRoche in the early 1950s when he hypothesized that these drugs could have psychoactive effects. He created a promising compound called Ro-5-0690, then shelved the project. One and a half years later, an associate chemist found Ro-5-0690 while cleaning the lab; he suggested that it be tested for psychoactive properties. Two months later, Dr. Lowell O. Randall, director of pharmacologic research at Hoffman–LaRoche, reported that the new medication had relaxing and sedative effects on mice and cats and was safe. The new medication was named chlordiazepoxide (brand name Librium).

Librium was more effective than Miltown, producing therapeutic effects at a smaller dosage, and had fewer side effects, including less sedation and lower risk of overdose. With its discovery, a large investigation began into benzodiazepines. Within a few years, diazepam (Valium) was created from the Librium molecule; it was approved for sale by the U.S. Food and Drug Administration in 1963 (Bakalar, 2005). Valium was more powerful than Librium and was prescribed widely throughout the 1960s and 1970s, reaching peak sales in the United States in 1978 (Bakalar, 2005). From 1969 to 1982, it was the top-selling medication in the United States (Kennedy, n.d.). Valium had a mixed reputation: at times it was promoted as a harmless panacea. It gained cultural notoriety in the Rolling Stones song "Mother's

Little Helper." Some of the dangers of Valium (e.g., addiction and withdrawal) were described in the 1979 book *I'm Dancing as Fast as I Can* (Gordon, 1979).

Currently Valium is used for treating a wide variety of psychological and physical conditions, including anxiety, alcohol withdrawal, seizures, muscle spasms, and insomnia. It is used worldwide and remains a frequently prescribed medication. Benzodiazepines should not be used during pregnancy or while nursing (Preston, O'Neal, & Talaga, 2008). Baenninger and Baenninger (2003) wrote a compelling biography of Leo Sternberg that includes a history of the development of Valium and other benzodiazepines, titled *Good Chemistry: The Life and Legacy of Valium Inventor Leo Sternbach.*

See also anxiety, anxiolytic, benzodiazepine.

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Vocal Expression

Humans have many different ways of expressing their emotions nonverbally. These include facial expression, body posture, body movements, vocal expression, and other methods. Vocal expressions of emotion encompass acoustics of speech (e.g., a person changes the loudness of her voice while she is saying something) and specific vocalizations such as laughing and screeching. Some examples of potential means of vocal expression are general tone of voice, pitch of voice, loudness, speed of speech, varying inflections, and other means. Although vocal expression has not been studied as extensively as other forms of nonverbal expression of emotion (facial expression in particular), a respectable body of research has now accumulated, mostly since the 1980s and 1990s.

Two general perspectives exist regarding the nature of the relationship between the use of one's voice and emotion. The first perspective is that one's voice is used to express emotion; it is a means to communicate the way one feels to other people. Scherer and his colleagues have been the main proponents of this view. The second perspective is that the voice is used to induce emotion in the listener and therefore to influence his behavior. This approach is termed the *affect induction* view (e.g., see Owren, Rendall, & Bachorowski, 2003). This latter approach was initially developed based on research on nonhuman primates and the functionality of calls that they make to

one another (e.g., Owren & Rendall, 1997, 2001). As Bachorowski and Owren (2008) discuss, the first view would be strongly supported if research showed that specific acoustic features of the voice were associated with specific emotions (e.g., a sudden increase in pitch reliably means happiness or a sudden decrease in pitch means anger, or particular changes in loudness are associated with particular emotions), or possibly in other ways. However, they state that the evidence is not strong to support this position. Bachorowski and Owren claim instead that compelling evidence exists that vocal features have a strong effect on the emotions of the target (person listening to the speech or vocalization), supporting the affect induction view. An implication of their view is that vocal expressions most clearly function as tactics of social influence rather than as external communications or representations of the way one is feeling internally.

The research on the relationship between emotion and use of the voice is complex. Neither the emotional expression nor the affect induction perspective, as competing perspectives, has been endorsed by a majority of emotion researchers.

See also aprosodia, basic emotions, body language, facial expression, nonverbal expression, primates, prosody.

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W

John Watson (1878–1958)

John Watson is one of the most significant figures in the history of psychology. He has three major contributions to his credit: he wrote the revolutionary paper that started the behaviorist movement, he conducted the famous (or infamous) Little Albert study, and he demonstrated the broad range of applications of classical conditioning.

Watson was born in rural South Carolina, one of six children in the Watson family. His father was an alcoholic who had alienated himself from his community with his unpredictable and aggressive behavior. By the time Watson was born, the family lived in poverty; his father jumped from one job to the next and periodically abandoned the family. When Watson was 12, his deeply religious and practical mother sold the farm they owned and moved the family to Greenville, South Carolina, where she believed they would have better economic and educational opportunities. Watson went to college and, despite poor grades, graduated from Furman University. He wrote a letter to the president of the University of Chicago, asking to be accepted as a doctoral student. This letter, along with a letter of recommendation from the president of Furman University, gained him admission, and he earned a doctorate in psychology at the age of 25, becoming the university's youngest PhD. He received several professional offers and accepted a full professorship at the Johns Hopkins University in Baltimore, Maryland.

During his graduate school years at the University of Chicago, Watson married Mary Ickes, a young woman from a prominent family. Watson was unfaithful to Mary within the first year of marriage, the beginning of a series of infidelities. The couple had two children. In 1919, Watson began an affair with his graduate student research assistant, Rosalie Rayner. The affair became scandalous and ruined his academic career. He and Mary divorced, he married Rosalie Rayner, and he left Johns Hopkins University to pursue a career in advertising. His advertising career was extremely successful, and the couple lived a luxurious life for a time. They too had two children. Watson loved Rosalie deeply, perhaps more than anyone is his life, and fell into a depression when she died of dysentery in her mid-thirties (Watson was 58). When Watson was 79, the year before his death, he was awarded the American Psychological

Association gold medal for contributions to psychology. At the ceremony, fearing that he might burst into tears when accepting the award, one of Watson's sons accepted the award for him. He died at age 80, having become somewhat unkempt and solitary in his later years.

In 1913, Watson wrote a paper, "Psychology as the Behaviorist Views It," that established behaviorism as a paradigm in psychology. In the paper, Watson argued that behavior—observable actions—should be the only subject matter of psychology. He argued for exclusion of all "mental processes," which include emotions, thoughts, motives, and dreams, as objects of study. His rationale was that behavior can be observed objectively (i.e., two or more individuals can observe an individual's behavior and come to some agreement regarding the nature of the behavior), whereas all mental processes cannot be observed objectively (because the person experiencing the mental process is the only person who can actually report on it). Therefore, to create a serious science, like physics, chemistry, or biology, the methods must be tightened up. Furthermore, Watson argued that the goal of psychology should be to predict and control behavior. His paper was powerful but not entirely convincing because Watson did not present real-life examples of how behaviorism could actually be practiced. So he set out to conduct some studies that could establish behaviorism as a science.

Watson's most famous study, published in 1920 with his future wife as coauthor, was the Little Albert study. Watson and Rayner set out to demonstrate that an emotion could be conditioned in an infant, thus showing that emotions are not entirely inborn and can be manipulated. In the study, Watson and Rayner took nine-month-old Albert and conditioned him to fear a white rat. They started by demonstrating that Albert was not initially afraid of the rat. In fact, before the conditioning procedures, Albert happily allowed the rat to walk near him as he sat and to touch him. Next, the researchers presented Albert with a stimulus that he naturally feared (a loud noise, produced behind Albert's head) and presented the white rat simultaneously. The loud noise and the rat were presented to Albert together (paired) several times. Albert cried during these conditioning trials. After seven pairings of the noise and rat, Albert began to cry and show other fear behaviors when the rat was presented by itself. Watson and Rayner had demonstrated that they could condition an infant to fear a previously unfeared object. This study showed that behaviorism could be a real science; research utilizing behaviorist principles and methodologies could produce results and could include real-life, practical, and significant topics. Shortly after the study was published, however, Watson left academia. Behaviorism had lost its primary champion. For this reason, behaviorism was in a lull until another enthusiastic, perhaps dogmatic figure entered the scene in the 1930s: B. F. Skinner.

Watson was also well known for warning against the dangers of spoiling children with too much love and pampering. Watson believed that human emotions could be, and should be, controlled. We can condition our children to behave in ways that minimize their individual suffering and that benefit society. The conditioning he promoted would be called *tough love* today. The book he published in 1928, *The Psychological Care of Infant and Child*, was well received in both academic and popular circles.

See also attachment, behavior therapy, behaviorism, conditioned emotional response, fear, phobia, B. F. Skinner

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Watson's Little Albert study sparked discussion among researchers about the ethics involved in using human participants in research. These discussions eventually led to professional practice and research guidelines. Most research institutions (e.g., at universities and medical centers) now have institutional review boards that go over proposed research methods to ensure participants' well-being and researchers' compliance with professional ethical guidelines.

Edward O. Wilson (1929–)

Edward O. Wilson is a representative of evolutionary psychology, which focuses on understanding human psychology (behaviors, thoughts, and emotions) from an evolutionary standpoint. The assumption behind evolutionary psychology (also called human sociobiology) is that psychological traits have evolved through natural selection in the same way that physical traits have evolved. For example, the fact that aggressive behavior exists in current human behavior is most likely indicative of aggressive behavior serving a purpose in the evolutionary history of our species; aggressiveness enhanced our survival.

Edward O. Wilson was born in Birmingham, Alabama, and spent his childhood in several southern cities and towns. He was an only child to Inez and Edward Wilson, a government accountant. At age seven, while his parents were going through a divorce, he was sent to live with friends in Paradise Beach, Florida. During that summer, he explored the nature surrounding his temporary home, the beginning of his intense interest in nature. One of his investigations resulted in an accident with a fish; as Wilson pulled the fish out of the water, it flew into his face, and one of the spines cut his eye, leaving him blind in that eye.

In his autobiography *Naturalist*, Wilson (1994) explained that his decision to focus his study on ants resulted partly from his physical challenge. He said, "I would thereafter celebrate the little things of the world, the animals that can be picked up between thumb and forefinger and brought close for inspection" (Wilson, 1994, p. 15). After his parents' divorce, he lived with his father and stepmother, who moved a number of times. He remained an only child. Wilson earned BS and MS degrees in biology from the University of Alabama. He earned his PhD in entomology, specializing in myrmecology (the study of ants), at Harvard University in 1955. In the year,

Wilson married Irene Kelley, and they had a daughter. In 1956, he was appointed to a faculty position at Harvard University, where he remained for four decades, until his retirement.

Wilson is credited with making sociobiology into both a popular and a controversial subject of study. Although Wilson's predecessors or contemporaries had applied the natural selection concept to social behavior—for example, Richard Dawkins (1976) in his book *The Selfish Gene* and Darwin, who discussed the evolutionary origin of emotional expression—Wilson was the first to summarize sociobiology principles in a wide variety of species, ranging from bacteria and insects to the great apes and humans. His book *Sociobiology: The New Synthesis* (Wilson, 1975) provided this survey and touched the surface of what he would later say about evolution, social behavior, and humans. In *On Human Nature*, Wilson (1978) examined a wide variety of human behaviors from the evolutionary point of view, including aggression, altruism, bonding, gender differences, heroism, love, the soul, and warfare. Some people, including a few colleagues, reacted with anger to Wilson's book. During the 1970s, socialization theories prevailed in psychology, and Wilson's suppositions were taken by some to mean that people cannot change their behavior; that our genes create immutable characteristics. Some even accused him of racism and sexism, and at the 1978 annual meeting of the American Association for the Advancement of Science, a young woman poured a pitcher of ice water over his head.

In today's world, most agree that Wilson has become a less controversial figure. He has received over 100 awards, some for his scholarly contributions and others for his service to humanity. His awards include membership in the National Academy of Science (1969), two Pulitzer prizes (1979, 1991), the Crafoord Prize (the highest award given in ecology, 1990), recognition among *Time Magazine*'s 25 most influential people in America (1995), the Audubon Medal of the National Audubon Society (1995), and the gold medal of the Worldwide Fund for Nature (1990). He has written 20 books and over 400 articles. Edward Wilson currently resides in Lexington, Massachusetts, with his wife, Irene.

See also Charles Darwin, Paul Ekman, evolutionary psychology (human sociobiology).

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Y

Yale-Brown Obsessive Compulsive Scale

The Yale-Brown Obsessive Compulsive Scale (Y-BOCS) was developed in 1989 by Drs. Wayne Goodman, Lawrence H. Price, Steven A. Rasmussen, and colleagues (Goodman et al., 1989a, 1989b). It is designed to rate the severity of symptoms in obsessive-compulsive disorder (OCD). The original Y-BOCS is a 10-item scale, with 5 of the items addressing obsessions and the other 5 asking about compulsions. Questions ask about time spent on, interference from, distress from, resistance to, and control over obsessions or compulsions. Each item is rated on a scale from 0 (none) to 4 (extreme), yielding a total score ranging from 0 to 40. Separate subtotals can be generated for obsessions and compulsions, allowing treatment to be tailored to the individual's specific manifestation of OCD. The scale, originally intended to be administered by professional clinicians (e.g., therapists), can also be self-administered. The Y-BOCS is considered the most widely used OCD scale (Deacon & Abramowitz, 2005). It is used in research and in treatment to measure changes in OCD symptom severity. It was not originally designed as a diagnostic instrument. While the Y-BOCS is popular and considered the gold standard in measurement of OCD symptoms, some researchers have questions about its validity and have suggested scoring changes (Deacon & Abramowitz, 2005).

Prior to development of the Y-BOCS, other rating scales for OCD existed, but they all had limitations: they were cumbersome to administer, did not have established validity, or were otherwise unsuitable for use in drug trial research. Some scales included non-OCD symptoms (e.g., depression). Other scales focused only on certain types of obsessions or compulsions (e.g., fear of contamination or hand washing). The Y-BOCS does not focus on the content of the patient's symptoms, only on the severity. It is based on symptoms of OCD as defined in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III-R*; American Psychiatric Association, 1987).

A companion tool is the Yale-Brown Obsessive Compulsive Scale Symptom Checklist (Goodman et al., 1989a, 1989b). It is a clinician- or self-administered checklist of common types of OCD symptoms. Unlike the Y-BOCS, it does focus on the content of symptoms. For example, it asks about obsessions related to aggression, contamination, sex, religion, hoarding/saving, and need for exactness or symmetry. The checklist has been criticized as discriminatory b[illegible] one of the items asks about

obsession with homosexual content. A Swedish patient filed a complaint with the Ombudsman against Discrimination on Grounds of Sexual Orientation (a Swedish public agency), which determined that the Y-BOCS checklist is discriminatory and should be discontinued (Rûck & Bergström, 2006). However, Swedish doctors Rûck and Bergström stress that interpreted within the appropriate context, the Y-BOCS checklist is useful and not discriminatory.

See also Diagnostic and Statistical Manual of Mental Disorders, obsessive-compulsive disorder.

Further Reading:

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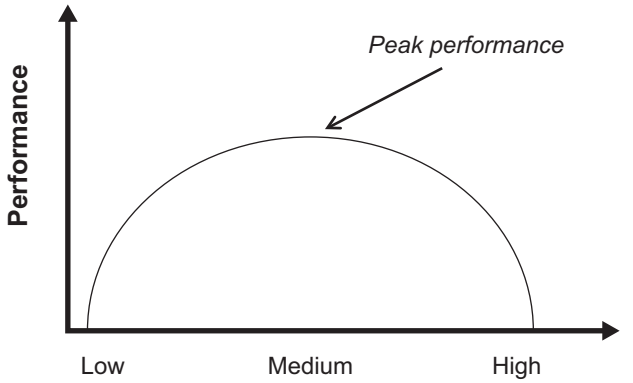
Yerkes-Dodson Law

The Yerkes-Dodson law is a theory that emphasizes the relation between arousal and task performance. Specifically, the theory states that the optimal task performance is accomplished at a moderate level of arousal and that low or high levels of arousal result in relatively poorer task performance, leading to an inverted (upside down) U-shaped relation between arousal and task performance. The Yerkes-Dodson law originally derived from propositions by American psychologists Robert Mearns Yerkes and John Dillingham Dodson in an article published in the *Journal of Comparative Neurology and Psychology* in 1908.

The arousal that Yerkes and Dodson described can also be thought of as emotion or motivation. The change of arousal from a drowsy state (low arousal) to an alert state (moderate arousal) produces enhanced efficiency of performance. However, in other cases, the change of arousal from an alert state to an extremely emotional state (high arousal) leads to impaired responding or performance. This theory indicates that one needs to be moderately aroused when studying for an upcoming exam because with extreme arousal, one becomes too anxious about the exam, and the anxiety might interfere with performance. The Yerkes-Dodson law further proposes that increasing task difficulty decreases the optimal levels of arousal for its performance; that is, an easy or simple task requires moderate to high arousal for an optimal performance, whereas a complex or difficult task needs lower levels of arousal for an optimal performance.

The inverted U-shaped function relating arousal to task performance proposed in the Yerkes-Dodson law has been criticized by some researchers. For instance,



The Yerkes-Dodson law is an empirical relationship between arousal and performance, originally developed by psychologists Robert M. Yerkes and John Dillingham Dodson in 1908. The law dictates that performance increases with physiological or mental arousal, but only up to a point. When levels of arousal become too high, performance decreases. (Courtesy of Yvette Malamud Ozer)

Bäumler (1994) argues that with regard to arousal levels in the extensive middle ground (neither extreme of very low nor very high arousal), research evidence does not clearly implicate a constant or predictable best level for optimal performance. Furthermore, as Mendl (1999) argues, the law is not particularly helpful because it is too broad and general.

See also motivation.

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Yoga

Yoga is an ancient Sanskrit word meaning "union" or "reunion," referring to the union of body, mind, and soul or spirit. Historically, the practice of yoga has been rooted in spiritual enlightenment. However, as yoga was exported to the West, particularly the United States, yoga has also come to be known as flexibility exercises and stretch relaxation, and spirituality is often not a necessary aspect of the practice.

The roots of yoga have been traced as far back as the sixth century BC. Patanjali was probably the first person to describe the yoga postures in writing in a text called the *Yoga Sutras*, written in India in the second century BC. Yoga was brought to the United States in the late 1800s when Swami Vivekananda spoke to the World Parliament of Religions in Chicago. In the 1970s, Swami Rama, a yogi master from the Himalayan Institute, visited the United States, further popularizing yoga. Enthusiasm for the practice has continued to increase in the decades that followed. Over time, a number of yoga paths have developed, each focusing on a unique route toward enlightenment. Yogi master Swami Rama has identified five paths: karma yoga (the path of action), bhakti yoga (the path of devotion), jnana yoga (the path of knowledge), kundalini yoga (the path of spiritual awakening), and hatha yoga (the path of physical balance).

According to a study conducted by the *Yoga Journal* in 2008 (Ruiz, 2008), about 15.8 million Americans practice yoga. The primary reason cited for practicing yoga was maintenance and improvement of health. Since about 2000, the health benefits of yoga, particularly hatha (physical balance) yoga, have been studied extensively. For instance, results of research have indicated that regular practice of hatha yoga helps with decreasing menopausal symptoms (Khalsa, 2004), coping with breast cancer (Carson et al., 2007), coping with diabetes (Mercuri, Olivera, Souto, Guidi, & Gagliardino, 2000), and carpal tunnel syndrome (Garfinkel et al., 1998). Additionally, yoga clearly increases flexibility (Ruiz, 2000). Smith, Hancock, Blake-Mortimer, and Eckert (2007) showed that hatha yoga is helpful for stress management.

Practicing each hatha yoga asana (posture) involves three steps: moving into the posture, maintaining it, and moving out of it. Moving into and out of the poses should be slow and gradual. Conscious breathing is typically an aspect of hatha yoga practice. Some examples of yoga poses are the mountain, fish, cobra, human triangle, spinal twist, and corpse. A number of books clearly describe how to do hatha yoga postures, for instance, Girdano, Dusek, and Everly's (2009) *Controlling Stress and Tension* and Seaward's (2009) *Managing Stress.*

See also stress.

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APPENDIX A: PSYCHOPHARMACOLOGY

The authors have worked to ensure that all information concerning medications in this book is accurate at the time of publication. This information is intended to generally describe different classes and types of medication used to treat mental health disorders. It is not a comprehensive list of medications or side effects. It is not intended to recommend the use of certain medications, suggest treatment, or substitute for the care of a qualified health care professional. Specific situations may require specific therapeutic approaches not included in this book. For these reasons, we recommend that readers follow the advice of qualified health care professionals directly involved in their care.

Yvette Malamud Ozer

Psychopharmacology: Medications (By Class)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Tricyclic antidepressants (*TCAs*)			Clinical depression, pain, attention-deficit hyperactivity disorder (ADHD)	Also used successfully for headache, bulimia, irritable bowel syndrome, narcolepsy, insomnia, persistent hiccups, pathological laughing or crying, smoking cessation, and as an adjunct in schizophrenia; high risk of overdose; TCAs may be involved in up to 33% of all fatal poisonings, second only to analgesics

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Tricyclic antidepressants (*TCAs*) (*continued*)				
	amitriptyline	*Elavil, Endep, Tryptanol, Trepiline*		
	butriptyline	*Evadene, Evadyne*		Sedative properties
	clomipramine	*Anafranil*	Obsessive-compulsive disorder (OCD)	
	desipramine	*Norpramin, Pertofrane*	Mood disorders, especially bipolar disorder	
	dothiepin	*Prothiaden, Thaden*		
	doxepin	*Adapin, Sinequan*		
	imipramine	*Tofranil*	Migraine	
	iprindole			Can be fatal when combined with Ecstasy (MDMA)
	lofepramine	*Gamanil, Lomont*		
	melitracen			
	nortriptyline	*Pamelor, Aventyl, Nortrilen*		
	opipramol	*Neuraxpharm, Insidon*	Anxiety	
	protriptyline	*Vivactil*		
	trimipramine	*Surmontil*		
Tetracyclic antidepressants			Depression, panic disorders, bipolar disorders	
	amoxapine	*Asendin, Asendis, Defanyl, Demolox, Moxadil*		Not publicly available
	maprotiline	*Ludiomil*		
	mianserin	*Tolvon*		Phased out in favor of mirtazapine

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Tetracyclic antidepressants (continued)				
	setiptiline	*Tecipul*		Not publicly available
	trazodone	*Desyrel*		
Monoamine oxidase inhibitors (MAOIs)			Especially potent in refractory (treatment-resistant) depressions	*Disadvantages:* drug-drug and drug-food interactions can be dangerous
	iproniazid	*Marsilid, Iprozid, Ipronid, Rivivol, Propilniazida*		Originally developed to treat tuberculosis
	isocarboxazid	*Marplan*	Depression (not responsive to SSRIs), bulimia	
	nialamide	*Psicodisten, Niaquitil, Nialamid, Niamidal, Niamide, Novazid, Nuredal, Niamid, Niazin, Nyazin, Surgex, Mygal, Delmoneurina, Isalizina, Espril, Nyezin*	Depression; off-label uses: trigeminal neuralgia	
	pargyline	*Eutonyl*	Moderate to severe hypertension (high blood pressure)	
	phenelzine	*Nardil*	Anxiety disorder, social phobia, generalized anxiety disorder (GAD), social anxiety disorder, atypical depression, refractory depression, bulimia	Side effects may include sedation, hypotension (low blood pressure), insomnia, weight gain; low-tyramine diet required to prevent hypertensive reaction

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Monoamine oxidase inhibitors (*MAOIs*) (*continued*)				
	selegiline	*Deprenyl, Emsam* (*transdermal patch*)	Major depression (transdermal patch), early-stage Parkinson's disease, senile dementia	Under investigation for ADHD treatment and smoking cessation aid; *off-label uses:* narcolepsy, as a nootropic (to improve thinking, memory, and learning), for its purported life-extending effects, and to positively affect libido in older men; *veterinary uses:* symptoms of Cushing's disease and cognitive dysfunction in dogs
	tranylcypromine	Parnate	Major depressive episodes without melancholia, refractory depression and anergic (low-energy) atypical depression; off-label uses: post-traumatic stress disorder (PTSD)	
Reversible inhibitors of monoamine oxidase A (*RIMAs*)				*Benefit:* no special diet necessary (as with MAOIs)
	brofaromine	*Consonar*	Depression, anxiety	
	harmaline			Harmaline is a naturally occurring alkaloid found in the hallucinogenic plant yage (*Banisteriopsis caapi*), also known as ayahuasca; can cause tremors
	moclobemide	*Aurorix, Manerix*	Depression, social anxiety	Reversible MAO-A inhibitor; available in Europe and Canada; not available in United States

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Reversible inhibitors of monoamine oxidase A (RIMAs) (continued)	toloxatone	*Humoryl*		
Selective serotonin reuptake inhibitors (SSRIs)			Depression, OCD, GAD, social anxiety disorder, PTSD	Side effects may include sexual dysfunction, nausea, sedation, insomnia, sweating, withdrawal syndrome
	alaproclate		Depression; also used to suppress cocaine cravings	
	citalopram	*Celexa, Cirpam, Cirpamil, Elopram*		Minimal documented interaction with other drugs; minimal sedation/weight gain; may cause anxiety initially
	escitalopram	*Lexapro*	Depression, GAD, social anxiety	Minimal documented interaction with other drugs; minimal sedation/weight gain; may cause anxiety initially
	etoperidone	*Etonin*		Used in the 1970s to impede the effects of LSD
	fluoxetine	*Prozac, Sarafem*		First SSRI on the market (1986); *advantages:* activating (energizing), long half-life; *disadvantages:* may cause initial anxiety, may interact with other medications
	fluvoxamine	*Luvox*	OCD (patients with obsessive symptoms), GAD, social anxiety disorder	

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Selective serotonin reuptake inhibitors (*SSRIs*) (*continued*)				
	paroxetine	*Paxil, Pexeva*	GAD, social anxiety disorder	Good antianxiety benefit; more prone to withdrawal symptoms, weight gain, may interact with other medications; contraindicated in pregnancy
	sertraline	*Zoloft*	Depression, extreme shyness, GAD, social anxiety disorder, PTSD	*Advantages:* not too sedating, does not typically cause anxiety; *disadvantages:* more prone to gastrointestinal side effects
	zimelidine	*Normud, Zel*		Synthesized from the antihistamine brompheniramine
Atypical antidepressants				
Serotonin-norepinephrine reuptake inhibitors (*SNRIs, NSRIs, SSNRIs*)				
	desvenlafaxine	*Pristiq*	Major depressive disorder (MDD), vasomotor symptoms of menopause	Currently in regulatory review process; also being tested for use in treatment of fibromyalgia and neuropathic pain
	duloxetine	*Cymbalta*	Depression, diabetic nerve pain	Good for severe depression; may cause nausea, sedation
	milnacipran	*Ixel*	Depression, chronic pain	

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Serotonin-norepinephrine reuptake inhibitors (*SNRIs, NSRIs, SSNRIs*) (*continued*)				
	nefazodone	*Serzone*	Good at reducing anxiety	Fewer sexual side effects; *disadvantages:* sedating, prone to medication interactions, rare reports of liver damage; no longer available in United States (withdrawn in 2004 because of safety concerns)
	venlafaxine	*Effexor*	Severe depression, GAD, social anxiety disorder, chronic pain	Side effects may include sexual dysfunction, nausea, sedation, insomnia, sweating, withdrawal syndrome, hypertension
Selective serotonin reuptake enhancers (*SSREs*)				
	tianeptine	*Stablon, Coaxil, Tatinol*	Antidepressant, anxiolytic; off-label use: asthma, erectile dysfunction	Particularly suitable for use in elderly patients and following alcohol withdrawal
Noradrenergic and specific serotonergic antidepressants (*NaSSAs*)				
	mirtazapine	*Remeron, Avanza, Axit, Mirtabene, Mirtaz, Norset, Organon, Remergon, Remergil, Rexer, Promyrtil, Zispin*	Mild to severe depression; off-label use: insomnia, panic disorder, OCD, GAD, social anxiety disorder, PTSD	Free of serotonin-related side effects; less sexual dysfunction; side effects include sedation, dry mouth, and weight gain; indicated in treating depressed geriatric patients who often show marked weight loss

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Muscarinic antagonists				
	dibenzepin	*Noveril*	Depression	
Dopamine reuptake inhibitors (DARIs)				
	amineptine	*Maneon, Survector*		May have abuse potential for stimulant properties
	phenmetrazine	*Preludin, Defenmetrazin, Fenmetrazin, Oxazimedrine, Phenmetraline*	Anorectic (promotes weight loss)	A CNS stimulant; removed from market due to abuse potential
	vanoxerine			Under investigation as treatment for cocaine addiction
Norepinephrine-dopamine reuptake inhibitors (NDRIs)				
	bupropion	*Wellbutrin, Budeprion, Zyban*	Depression, smoking cessation	*Advantages:* energizing, few sexual side effects, less weight gain; *disadvantages:* may increase anxiety and insomnia; can cause seizures (especially if dose >400 mg/day)
	nomifensine maleate	*Merital*		Abuse potential; can cause anemia, liver, and kidney toxicity; used mainly for research

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Norepinephrine reuptake inhibitors (NRIs, NERIs, NARIs)				
	atomoxetine	*Strattera, Attentin*	ADHD; good for cognitive symptoms	Nonstimulant treatment for ADHD; originally intended to be a new antidepressant drug, however, no clinical benefits could be shown; minimal sexual side effects; *disadvantages:* may cause sedation or anxiety
	maprotiline	*Deprilept, Ludiomil, Psymion*	Depression, anxiety, insomnia	Second-generation antidepressant; may worsen psychotic conditions (e.g., schizophrenia); should not be used during manic phase of bipolar disorder
	reboxetine	*Edronax, Norebox, Prolift, Solvex, Vestra*	Clinical depression, panic disorder, ADD/ADHD	
	viloxazine	*Emovit, Vivalan, Vivarint, Vicilan*	Depression; off-label uses: narcolepsy, alcoholism	
Stimulants			Has been used as antidepressant (alone or to augment other antidepressant medications)	High abuse potential; side effects include insomnia, appetite suppression, anxiety, and agitation
	dextroamphetamine	*Dexedrine*		
	methamphetamine	*Desoxyn*		
	methylphenidate	*Ritalin, Rubifen, Concerta*		

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Antidepressants				
Alternative antidepressants				
	5-HTP			5-hydroxytryptophan (a serotonin precursor)
	L-Tryptophan		Natural antidepressant found in turkey, potatoes, and milk	
	melatonin		Depression, seasonal affective disorder (SAD)	Serotonin is a parent to melatonin (N-acetyl-5-methoxytryptamine); inadequate serotonin production affects melatonin production, affecting sleep patterns
	Omega-3 fatty acids		Unipolar depression; also claimed to be effective in treatment of bipolar disorder, premenstrual syndrome (PMS), fibromyalgia, chronic fatigue syndrome (CFS), Huntington's disease, schizophrenia, ADD/ADHD	Eicosapentaenoic acid; an omega-3 fatty acid found in fish oil, seafood, flaxseed, and eggs
	St. John's wort		Minor to moderate depression	*Hypericum perforatum*
	tyrosine			
	vitamins and minerals			Lack of well-designed, controlled studies showing efficacy
Anxiolytics				
Benzodiazepines			Severe anxiety, psychosis, anticonvulsant, sedative, skeletal muscle relaxant	Side effects may include sedation, cognitive impairment, ataxia, withdrawal symptoms

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Benzodiazepines (continued)				
	adinazolam	*Deracyn*		
	alprazolam	*Xanax* (*also known by many other brand names in countries other than the United States*)	Panic disorder, panic attacks, severe anxiety disorder, nongeneralized (performance-type) social anxiety disorder, adjunctive treatment for depression (with SSRIs), sometimes used to treat borderline personality disorder	
	bentazepam	*Thiadipone*		
	bromazepam	*Calmepam, Compendium, Creosedin, Durazanil, Lectopam, Lexaurin, Lexomil, Lexotan, Lexotanil, Normoc, Somalium*		
	brotizolam	*Lendormin*		
	camazepam	*Albego, Limpidon, and Paxor*		
	chlordiazepoxide	*Librium, Librax, Librocol, Librelease, Libritabs, Limbitrol, Menrium, Novo-Poxide, Poxidium, Risolid, Defobin*		*Street name:* lib; first benzodiazepine developed (1957)
	cinolazepam	*Gerodorm*		
	clobazam	*Frisium, Urbanyl, Mystan*	Anxiety, seizure disorder, adjunctive treatment for schizophrenia	

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Benzodiazepines (continued)				
	clonazepam	*Klonopin, Rivotril*	Anxiety disorders, panic attacks, GAD, social anxiety disorder, seizure disorder, restless leg syndrome, initial treatment of mania (together with lithium, haloperidol, or risperidone), chronic fatigue syndrome, night terrors, Tourette's syndrome, side effects of schizophrenia agents; off-label use: hallucinogen-persisting perception disorder	
	clorazepate	*Tranxene, Tranxilium*	Alcohol withdrawal, seizure disorder, anxiety	
	clotiazepam	*Trecalmo*		Not approved for sale in United States or Canada
	cloxazolam	*Sepazon, Olcadil*		Not approved for sale in United States or Canada
	cyprazepam	*Somelin*		Not approved for sale in United States or Canada
	diazepam	*Valium, Stesolid, Diazemuls, Seduxen, Bosaurin, Diapam, Antenex, Ducene, Apozepam, Pax*	Alcohol withdrawal, seizure disorder, anxiety, muscle spasms, insomnia, veterinary uses	*Street names:* V, blue
	doxefazepam	*Doxans*		Not approved for sale in United States or Canada
	ethyl loflazepate	*Meilax*		
	etizolam	*Sedekopan*		Not approved for sale in United States or Canada

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Benzodiazepines (continued)				
	fludiazepam	*Erispan*		
	flunitrazepam	*Rohypnol*		Abused as a date rape drug; *street names:* rophy, rufflels, roofies, ruffies, ruff up, rib, roach 2, R2, R2-Do-U, roche, rope, ropies, circles, circes, forget it, forget-me-pill, Baptist Communion, Mexican Valium
	flurazepam	*Dalmane, Dalmadorm*	Insomnia	Primarily used as a hypnotic (for insomnia); longest half-life of all the benzodiazepines; may stay in the bloodstream up to four days
	flutazolam	*Coreminal*		
	flutoprazepam	*Restas*		
	gidazepam	*Gidazepamum*	Anxiety, seizure disorders, sedative, muscle relaxant	
	halazepam	*Alapryl, Pacinone, Paxipam, Paxipam*		
	haloxazolam	*Somelin*		Not approved for sale in United States or Canada
	ketazolam	*Anseren, Anxon, Contamex, Loftran, Marcen, Sedotime, Solatran, Unakalm*		Not approved for sale in United States or Canada
	loprazolam	*Dormonoct, Havlane, Sonin, Somnovit*	Severe insomnia	

(continued)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Benzodiazepines (continued)				
	lorazepam	*Ativan and Temesta are most common*	Anxiety, nongeneralized (performance-type) social anxiety disorder, insomnia, seizure disorder, alcohol withdrawal, adjunct antinausea drug	Banned in United Kingdom since 1991
	lormetazepam	*Noctamid, Ergocalm, Loramet, Dilamet, Sedaben, Stilaze, Nocton, Pronoctan, Noctamide, Loretam, Minias, Aldosomnil*		Sometimes known as methyllorazepam; not approved for sale in United States or Canada
	medazepam	*Nobrium, Rudotel, Raporan*		
	mexazolam	*Melex*		Not approved for sale in United States or Canada
	midazolam	*Versed, Hypnovel, Dormicum, Dormonid*	Sedation prior to surgery, rapid treatment of prolonged-seizures-status epilepticus	*Street name:* dazzle
	nimetazepam	*Erimin*		Subject to abuse, especially by people addicted to amphetamines or opiates; no longer sold in most Western nations
	nitrazepam	*Mogadon, Alodorm*	Insomnia, myoclonic seizures	
	nordazepam	*Stilny, Madar, Vegesan, Calmday*	Anxiety	
	oxazepam	*Alepam, Murelax, Oxascand, Serax, Serepax, Seresta, Sobril*	Anxiety disorders with associated tension, irritability, and agitation; drug and alcohol withdrawal; anxiety associated with depression	

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Benzodiazepines (continued)				
	oxazolam	*Hializan, Serenal, Tranquit*		
	phenazepam		Seizure disorder, alcohol withdrawal, insomnia, pre-op anesthesia	Developed in Soviet Union; used in Russia
	pinazepam	*Domar*		
	prazepam	*Centrax*		
	temazepam	*Restoril, Normison, Tenox, Temaze*	Insomnia and other sleep disorders	One of the most addictive benzodiazepines; high abuse potential; *street names:* rugby balls, terms, jellies, mazzies, beans, eggs, yellow jackets; primarily used as a hypnotic (for insomnia)
	tetrazepam	*Clinoxan, Myolastan, Musaril, Relaxam, Spasmorelax*	Muscle spasm, anxiety disorders such as panic attacks; more rarely: depression, PMS, agoraphobia	
	tofisopam	*Emandaxin, Grandaxin*	Anxiety, alcohol withdrawal	
	triazolam	*Halcion, Novodorm, Songar*	Acute insomnia, jet lag	Banned in the United Kingdom since 1991; primarily used as a hypnotic (for insomnia)
	zolazepam	*Flupyrazapon*	Veterinary anesthetic	
Atypical and nonbenzodiazepines				
	estazolam	*ProSom, Eurodin*	Insomnia	A triazolobenzodiazepine with rapid onset and limited daytime sedation

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Atypical and nonbenzo-diazepines (continued)				
	eszopiclone	*Lunesta*		Short-acting nonbenzodiazepine
	quazepam	*Doral, Dormalin*	Insomnia	A benzodiazepine derivative that selectively targets GABA-A type 1 receptors; has hypnotic and anticonvulsant properties; less overdose and dependence potential and fewer side effects than typical benzodiazepines
	zaleplon	*Sonata*		Short-acting nonbenzodiazepine hypnotic
	zolpidem	*Ambien*		Short-acting nonbenzodiazepine
Partial serotonin 1A agonists			Anxiety; also used as augmentative treatment for depression	A class of drugs with anxiolytic effects; fewer side effects than benzodiazepines; not addictive; tolerance does not develop
	buspirone	*BuSpar, Ansial, Ansiced, Anxiron, Axoren, Bespar, Buspimen, Buspinol, Buspisal, Narol, Spitomin*		Delayed onset of action (1–2 weeks); side effects may include nausea, dizziness, and anxiety
	gepirone	*Ariza, Variza*		A pyridinyl piperazine partial 5-HT 1A agonist; not approved by the U.S. Food and Drug Administration (FDA)
	ipsapirone			

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Partial serotonin 1A agonists (continued)				
	tiospirone		Antipsychotic	
Barbiturates			Anxiety, seizure disorders, sedative	Anxiolytic effects linked to sedation; high risk of abuse; nontherapeutic uses include physician-assisted suicide and capital punishment
	allobarbital			
	alphenal			
	amobarbital	*Amytal*		*Street names:* downers, blue heavens, blue velvet, blue devils
	aprobarbital			
	barbexaclone			
	barbital			
	butabarbital			
	butalbital			
	butallylonal			
	butobarbital			
	Combination of secobarbital sodium and amobarbital sodium in equal proportions	*Tuinal*		*Street names:* rainbows, reds and blues, tooies, double trouble, gorilla pills, F-66s
	cyclobarbital			
	cyclopal			
	ethallobarbital			
	heptabarbital			
	hexethal			

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Barbiturates (continued)				
	hexobarbital			
	mephobarbital			
	metharbital			
	methohexital			
	methylpheno-barbital			
	pentobarbital	*Nembutal*		*Street names:* nembies, yellow jackets, abbots, Mexican yellows
	phenobarbital	*Luminal*		Used by Nazi doctors to kill children born with disease or deformity (code-named "Operation T-4"); *street names:* purple hearts, goof balls
	probarbital			
	propallylonal			
	proxibarbital			
	reposal			
	secobarbital	*Seconal*		*Street names:* reds, red birds, red devils, lilly, F 40s, pinks, pink ladies, seggy
	talbutal			
	thialbarbital			
	thiamylal			
	thiobarbital			
	thiobutabarbi-tal thiopental			

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Barbiturates (continued)				
	vinbarbital			
	vinylbital			
Minor tranquilizers				
	ethchlorvynol	*Placidyl*	Insomnia	A sedative-hypnotic tertiary carbinol; addictive properties; causes withdrawal; side effects may include rash, faintness, restlessness, euphoria, nausea and vomiting, numbness, blurred vision, stomach pains, temporary dizziness, convulsions, hallucinations, memory loss; *street name:* jellybellies; not available in United States since 1999
	glutethimide	*Doriden*	Insomnia	Introduced in 1954 as a sedative-hypnotic to treat insomnia; abuse and addiction potential; causes severe withdrawal symptoms; rarely prescribed today
	meprobamate	*Miltown, Equanil, Meprospan*	Anxiety	Anxiolytic effects linked to sedation; high risk of abuse; largely replaced by benzodiazepines; *street name:* happy pills

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Minor tranquilizers (continued)				
	methyprylon	*Noludar*	Insomnia	Sedative in the piperidinedione family; side effects include rash, fever, depression, ulcers/sores in mouth or throat, bleeding or bruising, confusion, fast heartbeat, respiratory depression, edema, dizziness, drowsiness, headache, double vision, clumsiness, constipation, diarrhea, nausea, vomiting, weakness; withdrawn from U.S. market in 1965; withdrawn from Canadian market in 1990; rarely prescribed today
	tybamate	*Solacen, Tybatram*		
Beta blockers			Hypertension, congestive heart failure, abnormal heart rhythms, chest pain	Off-label use to combat physical symptoms of anxiety; side effects include hypotension, bradycardia (slow heart rate), and depression
	alprenolol	*Alfeprol, Alpheprol, Alprenolol, Alprenololum, Apllobal, Aptine, Aptol, Duriles, Gubernal, Regletin, Yobir*		
	atenolol	*Tenormin*		
	carteolol	*Carteololum, Cartrol, Ocupress*	Eyedrops used to treat glaucoma	
	levobunolol	*Betagan*	Eyedrops used to treat glaucoma	

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Beta blockers (continued)				
	mepindolol			
	metipranolol	*OptiPranolol*	Eyedrops used to treat glaucoma	
	nadolol	*Corgard*	Hypertension, chest pain	
	oxprenolol		Angina, arrhythmia, hypertension	Should not be used by people with asthma
	penbutolol	*Levatol*	Hypertension	
	pindolol	*Visken, Betapindol, Calvisken, Decreten, Durapindol*	Angina, arrhythmia, hypertension, acute stress reactions	Investigational use as augmentative treatment for depression
	propranolol	*Inderal*	Hypertension, angina, tachycardia, myocardial infarction, essential tremor, migraines	*Experimental use:* PTSD; *off-label use:* performance-type social anxiety disorder
	sotalol	*Betapace*	Arrhythmia, hypertension	
	timolol	*Blocadren*	Hypertension, to prevent heart attacks, to prevent migraines; ophthalmic use: (Timoptic) to treat glaucoma	
Other anxiolytics				
	clonidine	*Catapres*	Insomnia, hypertension, nerve pain, night sweats	A direct-acting alpha-2 adrenergic agonist; also used for anesthesia, opioid detoxification, Tourette's syndrome, and to counteract the effects of stimulant medications (e.g., methylphenidate, amphetamine); used in conjunction with stimulants to treat ADHD

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Other anxiolytics (continued)				
	diphenhydramine	*Benadryl, Dimedrol*	Anxiety, insomnia, allergic reactions, anaphylaxis, nausea, motion sickness	Antihistamine of the ethanolamine class; has sedative-hypnotic properties; used to treat extrapyramidal side effects (EPS) of antipsychotic medications and cholinergic effects of some medications; can be abused to induce delirium or hallucinations
	hydroxyzine	*Atarax, Alamon, Aterax, Durrax, Equipose, Masmoran, Orgatrax, Paxistil, Quiess, Tran-Q, Tranquizine, Vistaril*	Anxiety, itches and irritations, nausea	First-generation antihistamine of the piperazine class; synthesized in 1950s; also used as a weak analgesic and an opioid potentiator; has sedative, hypnotic, and tranquilizing properties; very little abuse potential
Alternative anxiolytics				
	Ashwagandha		Sedative, sexual vitality	*Withania somnifera;* also known as Indian ginseng, winter cherry, ajagandha, kanaje Hindi, and Samm Al-Ferakh; a plant in *Solanaceae* or nightshade family
	Coastal water hyssop			*Bacopa monnieri;* another common name is brahmi; clinical evidence of efficacy (comparable to lorazepam) with no amnesic or other side effects
	Kava kava		Anxiety, insomnia, menopausal symptoms	*Piper methysticum;* a euphoric, tension-relieving herb; limited reliable evidence of efficacy; may cause liver disease/failure

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Anxiolytics				
Alternative anxiolytics (continued)				
	Lavender		Anxiety, restlessness, insomnia, depression, headache, upset stomach	*Lavandula angustifolia;* used in aromatherapy or dried flowers made into tea; small studies on lavender for anxiety show mixed results
	Marijuana			*Cannabis sativa*
	Passionflower		Insomnia, hysteria, seizure disorder, painkiller	*Passiflora incarnata and P. edulis;* contains beta-carboline harmala alkaloids, which are MAOIs with antidepressant properties; limited reliable evidence of efficacy for anxiety disorders
	St. John's wort			*Hypericum perforatum;* limited reliable evidence of efficacy for anxiety
	Valerian root		Anxiety, seizure disorder, sedative	*Valeriana officinalis*
Mood stabilizers				
Anticonvulsants				
			Mood stabilizers/ antimanics (e.g., for bipolar disorder), GAD, social anxiety disorder, seizure disorders	
	carbemazepine	*Tegretol, Equetro*		
	felbamate	*Felbatol*	Seizure disorders	Use associated with aplastic anemia and acute liver failure; FDA warnings to only use as anticonvulsant for severe refractory seizure disorders

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Mood Stabilizers				
Anticonvulsants (contined)				
	gabapentin	*Neurontin*	Seizure disorders; off-label uses: bipolar disorder, GAD, social anxiety disorder	Not FDA approved for bipolar disorder; research suggests it is not an effective first- or second-line treatment for bipolar disorder, however, many psychiatrists continue to prescribe it; may be useful as an adjunctive treatment for refractory bipolar disorder with comorbid panic disorder or alcohol abuse; side effects may include sedation, ataxia, dizziness, dry mouth, nausea, asthenia (weakness), flatulence, decreased libido
	lamotrigine	*Lamictal, Lamictin, Lamogine*	Seizure disorders, bipolar disorder; off-label uses: PTSD, borderline personality disorder	Successful in controlling rapid cycling and mixed bipolar states in people who have not received adequate relief from lithium, carbamazepine, and/or valproate
	levetiracetam	*Keppra*		Research does not support use for bipolar disorder
	lithium carbonate	*Carbolith, Cibalith-S, Duralith, Eskalith, Lithane, Lithizine, Lithobid, Lithonate, Lithotabs*	Bipolar disorder	

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Mood Stabilizers				
Anticonvulsants (contined)				
	oxcarbazepine	*Trileptal*		Not FDA approved for bipolar disorder
	pregablin	*Lyrica*	GAD, social anxiety disorder, nerve pain	No research to support its use for bipolar disorder; may be used for comorbid anxiety and bipolar disorder; side effects may include sedation, ataxia, dizziness, dry mouth, nausea, asthenia, flatulence, decreased libido
	tiagabine	*Gabitril*	Anxiety disorders	Selective GABA reuptake inhibitor
	topiramate	*Topamax*		Not FDA approved for bipolar disorder; side effects may include weight loss
	valproate (divalproex, valproic acid)	*Depakene, Depakote, Depacon*		
Alternative mood stabilizers				
	Omega-3 fatty acids		Unipolar depression, bipolar disorder, schizophrenia	Eicosapentaenoic acid; an omega-3 fatty acid found in fish oil, seafood, flax-seed, and eggs; some studies suggest effectiveness in treating depressive symptoms in bipolar disorder (no effect on manic symptoms), but results are not conclusive

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Mood Stabilizers				
Alternative mood stabilizers (continued)				
	St. John's wort		Minor to moderate depression, bipolar disorder	*Hypericum perforatum;* some concerns about risk of triggering a manic or hypomanic episode in individuals with bipolar disorder
Antipsychotics			Bipolar disorder, schizophrenia, other psychoses	
Typical antipsychotics				Also referred to as first-generation or conventional antipsychotics, classical neuroleptics, or major tranquilizers
	chlorpromazine	*Thorazine, Largactil*		The first antipsychotic medication; first used in 1952 as a post-operative sedative
	fluphenazine	*Prolixin*		Available in time-release intramuscular (IM) formulation
	haloperidol	*Haldol, Serenace*		Available in time-release IM formulation
	loxapine	*Loxapac, Loxitane*		
	mesoridazine	*Serentil*		
	molindone	*Moban*		
	perphenazine	*Trilafon*		
	pimozide	*Orap*		
	prochlorperazine	*Compazine, Buccastem, Stemetil*		
	thioridazine	*Mellaril*		
	thiothixene	*Navane*		
	trifluoperazine	*Stelazine*		
	zuclopenthixol	*Clopixol*		

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Mood Stabilizers				
Atypical antipsychotics				Also referred to as second-generation or novel antipsychotics
	amisulpride	*Solian*		Selective dopamine antagonist; not approved for use in United States
	aripiprazole	*Abilify*		Dopamine partial agonist (third-generation antipsychotic)
	asenapine			
	bifeprunox			Not approved for use in United States
	clozapine	*Clozaril*		First atypical antipsychotic developed
	iloperidone	*Fanapta, Zomaril*		
	melperone	*Buronil, Burnil, Eunerpan*		Approved for use in Europe
	olanzapine	*Zyprexa*		
	paliperidone	*Invega*		
	quetiapine	*Seroquel*		
	risperidone	*Risperdal*		
	sertindole	*Serlect*		
	ziprasidone	*Geodon*		
	zotepine	*Nipolept, Losizopilon, Lodopin, Setous*		Not approved for use in United States
Alternative antipsychotics				
	Betel nuts			*Areca catechu;* a muscarinic agonist; some studies show effective on positive symptoms of schizophrenia
	glycine			

(*continued*)

Category/*Class*	Drug	Brand names	Indications/uses	Comments
Mood Stabilizers				
Alternative antipsychotics (continued)				
	Omega-3 fatty acids		Depression, bipolar disorder, schizophrenia	Found in fish oil, seafood, flaxseed, and eggs; some studies suggest effectiveness in treating schizophrenia, but results are inconsistent and inconclusive
	Rauwolfia			*Rauwolfia serpentina* extract was used before the first antipsychotics were synthesized in the 1950s; can cause depression
	Vitamin B_3 (niacin)			
Antiparkinsonian/anticholinergic drugs			Used to counteract side effects of antipsychotics	
	amantadine	*Symmetrel*		Dopamine agonist
	benztropine mesylate	*Cogentin*		Antimuscarinic for parkinsonian symptoms
	biperiden	*Akineton*		Antimuscarinic for parkinsonian symptoms
	diphenhydramine	*Benadryl, Dimedrol*	Anxiety, insomnia, allergic reactions, anaphylaxis, nausea, motion sickness	Antihistimine/anticholinergic; used to treat EPS of antipsychotics
	ethopropazine	*Parsidol*		Antimuscarinic for parkinsonian symptoms
	orphenadrine			Antimuscarinic for parkinsonian symptoms
	procyclidine	*Kemadrin*		Antimuscarinic for parkinsonian symptoms
	trihexyphenidyl	*Artane*		Antimuscarinic for parkinsonian symptoms

APPENDIX B: ORGANIZATIONS

The authors have made every attempt to ensure the accuracy of the information about the following organizations, including contact information. Descriptions are based on information provided by each organization. The information presented here is not intended to endorse or promote these organizations, nor is it intended to recommend specific treatments for conditions or for individuals.

Yuri Ito and Yvette Malamud Ozer

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

Organization	Type	Contact information	Description
Adult Children of Alcoholics (ACA)	S	(562) 575-7831 http://www.adultchildren.org/	12-step support group for adult children of alcoholics
Adult Survivors of Child Abuse (ASCA)	S, C	info@ascasupport.org http://www.ascasupport.org/	International self-help support group program for adult survivors of neglect, physical, sexual, or emotional abuse
Agoraphobics Building Independent Lives (ABIL)	S, C	(804) 257-5591 mhav@mhav.org http://www.mhav.org/programs.html#ABIL	Provides hope, support, and advocacy to people affected by panic attacks, phobias, or agoraphobia; has nationwide self-help groups; provides public education
AirCraft Casualty Emotional Support Services (ACCESS)	S	(877) 227-6435 info@accesshelp.org http://www.accesshelp.org/	Air disaster bereavement support network that connects people who have survived or lost loved ones in plane crashes and other aviation tragedies with individuals who have lived through similar losses

(continued)

Organization	Type	Contact information	Description
Al-Anon Family Groups	S	U.S.: (757) 563-1600 Canada: (613) 723-8484 http://www.al-anon.alateen.org/	Mutual support group for friends and relatives of alcoholics; members share their experience, strength, and hope to solve their common problems
Alateen	S	U.S.: (757) 563-1600 Canada: (613) 723-8484 http://www.al-anon.alateen.org/alateen.html	Part of Al-Anon Family Groups, Alateen is a mutual support group for teenagers who have an alcoholic friend or family member
Alcoholics Anonymous (AA)	S	(212) 870-3400 http://www.aa.org/	12-step program for recovery from alcoholism
Alternatives to Violence Project (AVP Britain)	C	44 020 7324 4755 http://www.avpbritain.org.uk/	Organizes low-cost anger management workshops for people in the community, schools, prisons, and the workplace in Britain
American Academy of Child and Adolescent Psychiatry (AACAP)	P, R	(202) 966-7300 http://www.aacap.org/	Professional medical association; active in research, prevention, and ensuring treatment and access to services for children, adolescents, and families affected by mental, behavioral, or developmental disorders
American Association for Marriage and Family Therapy (AAMFT)	P	(703) 838-9808 http://www.aamft.org/	A professional organization for marriage and family therapists, AAMFT develops standards for graduate education and training, clinical supervision, professional ethics, and the clinical practice of marriage and family therapy
American Association of Anger Management Providers (AAMP)	C	(310) 207-3591 georgeanderson@aol.com http://www.aaamp.org/	Directory listing anger management providers in the United States
American Association of Retired Persons (AARP)	E, C	(888) 687-2277 http://www.aarp.org/	Nonprofit, nonpartisan organization helping people 50 and over improve the quality of their lives; leads positive social change through advocacy; provides information and discounts on services
American Institute of Stress (AIS)	E	(914) 963-1200 Stress125@optonline.net http://www.stress.org/	Clearinghouse for information on all stress-related subjects
American Psychiatric Association (APA)	P	(888) 357-7924 (703) 907-7300 apa@psych.org http://www.psych.org/	Professional organization of psychiatrists that promotes high-quality care for individuals with mental disorders, promotes psychiatric education and research, and advances the profession of psychiatry in the United States

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

Organization	Type	Contact information	Description
American Psychological Association (APA)	P, R	(800) 374-2721 http://www.apa.org/	Scientific and professional organization representing psychology in the United States
American Psychosocial Oncology Society (APOS)	P	(434) 293-5350 info@apos-society.org http://www.apos-society.org/	Professional organization advancing the science and practice of psychosocial care for people with cancer; provides a forum for professionals and individuals interested in the psychological, social, behavioral, and spiritual aspects of cancer
American Red Cross	C	(800) RED-CROSS (202) 303-5000 http://www.redcross.org/	Provides domestic disaster relief, community services for the needy, support and comfort for military members and their families, educational health and safety programs, and international relief and development programs; collects, processes, and distributes blood and blood products
American Society of Group Psychotherapy and Psychodrama (ASGPP)	P	(609) 737-8500 asgpp@asgpp.org http://www.asgpp.org/	Fosters national and international cooperation among all who are concerned with the theory and practice of psychodrama, sociometry, and group psychotherapy
Animal Behavior Society (ABS)	R	(812) 856-5541 aboffice@indiana.edu http://animalbehaviorsociety.org/	A nonprofit scientific group that encourages and promotes the study of animal behavior
Anxiety Disorders Association of America (ADAA)	C	(240) 485-1001 information@adaa.org http://www.adaa.org/	Nonprofit organization that informs the public, health care professionals, and media that anxiety disorders are real, serious, and treatable; provides information and referrals
Association for Death Education and Counseling (ADEC)	E, C	(847) 509-0403 http://www.adec.org/	Interdisciplinary organization in the field of dying, death, and bereavement; provides education, a certification program, and referrals
Association for Play Therapy (APT)	P	(559) 294-2128 info@a4pt.org http://www.a4pt.org/	A national professional society advancing the usefulness of play, play therapy, and credentialed play therapists
Association for Psychological Science (APS)	R	(202) 293-9300 http://www.psychologicalscience.org/	A nonprofit organization that promotes, protects, and advances the interests of scientifically oriented psychology in research, application, teaching, and the improvement of human welfare

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

(continued)

Organization	Type	Contact information	Description
Aurora Dawn Foundation	C	adf_support@earthlink.net http://www.auroradawnfoundation.org/	Offers housing, support, and community and social advocacy for persons with HIV/AIDS who have nowhere else to go; has a residence for men, a women's outreach program, and a rural retreat for healing; located in San Francisco, California
Autism Network International (ANI)	S, E	http://www.autreat.com/	Autistic-run self-help and advocacy organization for autistic people
Autism Society of America (ASA)	C, E	(800) 3-AUTISM http://www.autism-society.org/	Grassroots autism organization that improves the lives of people affected by autism by increasing public awareness, advocating for appropriate services, and providing information regarding treatment, education, and research
Awareness Foundation for OCD & Related Disorders (AFOCD)	C	http://www.ocdawareness.com/	Educates the public and individuals about OCD and related disorders through lectures, e-mails, private coaching, consulting, films, and books
Batterers Anonymous	S	(951) 312-1041 jerrygoffman@hotmail.com http://batterersanonymous.com/	Self-help program for men who want to control their anger and eliminate their abusive behavior toward women
Borderline Personality Disorder Resource Center (BPDRC)	C	(888) 694-2273 bpdresourcecenter@nyp.org http://bpdresourcecenter.org/	Provides information and resources about borderline personality disorder
Cancer Hope Network	C	(877) 467-3638 info@cancerhopenetwork.org http://www.cancerhopenetwork.org/	Not-for-profit organization providing free, confidential, one-to-one support to cancer patients and their families
Cancer*Care*	C	(800) 813-HOPE info@cancercare.org http://www.cancercare.org/	Nonprofit organization providing free, professional support services to people with cancer, caregivers, children, loved ones, and the bereaved; services include counseling, education, financial assistance, and practical help and are provided by trained oncology social workers
Center on Addiction and the Family (CoAF)	C, E	(718) 222-6641 coaf@phoenixhouse.org http://www.coaf.org/	Formerly Children of Alcoholics Foundation; helps children from alcoholic and substance-abusing families break the cycle of addition and reach their full potential; develops curriculum and educational materials, provides information about substance abuse to the general public, trains professionals, and promotes research

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

Organization	Type	Contact information	Description
Chemically Dependent Anonymous (CDA)	S	(888) CDA-HOPE http://www.cdaweb.org/	12-step program to help people stay clean and sober
Child & Adolescent Bipolar Foundation (CABF)	S, C	(847) 492-8519 cabf@bpkids.org http://www.bpkids.org/	Parent-led organization of families raising children and teens living with bipolar disorder and related conditions; provides education, support, advocacy, and referrals to Internet and local support groups
Cocaine Anonymous (CA)	S	(310) 559-5833 cawso@ca.org http://www.ca.org/	12-step recovery program for cocaine
Co-Dependents Anonymous (CoDA)	S	(602) 277-7991 outreach@coda.org http://www.codependents.org/	12-step program for men and women whose common purpose is to develop healthy relationships
COLAGE	S, E	(415) 861-5437 colage@colage.org http://www.colage.org/	National movement of children, youth, and adults with one or more lesbian, gay, bisexual, transgender, and/or queer parents; builds community and works toward social justice through youth empowerment, leadership development, education, and advocacy
Compass, Inc.	C, E	(561) 533-9699 http://www.compassglcc.com/	Diminishes stereotypes by challenging long-standing misconceptions about the character of the lesbian, gay, bisexual, and transgender community through education and advocacy, providing health services, and community organizing; located in Palm Beach County, Florida
Council on Anxiety Disorders	C, S	(706) 947-3854 slvau@stc.net	Two groups in Georgia that hold meetings to provide education, support, and encouragement for people with anxiety disorders
Crystal Meth Anonymous (CMA)	S	(213) 488-4455 http://www.crystalmeth.org/	12-step recovery program for crystal meth users (methamphetamine)
Daily Strength Anger Management Support Group	S	http://www.dailystrength.org/c/Anger-Management/support-group/	Online anger management support group

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Organization	Type	Contact information	Description
Delta Society	E, C	info@DeltaSociety.org http://www.deltasociety.org/	Delta Society educates health care and other professionals about how to incorporate animals into goal-directed treatment or visiting animal activities, provide high-standard therapy animal training and curricula, and inspire people to volunteer with their pets in their local communities to improve people's health and well-being through positive interactions with animals
Depressed Anonymous (DA)	S	(502) 569-1989 info@depressedanon.com http://www.depressedanon.com/	12-step program for depression
Depression and Bipolar Support Alliance (DBSA)	S, R, C	(800) 826-3632 http://www.dbsalliance.org/	Patient-directed national organization focusing on mood disorders; provides up-to-date, scientifically based tools and information for the general public; supports research to promote more timely diagnosis, develop more effective and tolerable treatments, and discover a cure
Drug Free America Foundation (DFAF)	E	(727) 828-0211 http://www.dfaf.org/	Drug prevention and policy organization committed to developing, promoting, and sustaining global strategies, policies, and laws to reduce illegal drug use, drug addiction, and drug-related injury and death; opposes legalization of drugs and permissive drug policies
Emotional Health Anonymous (EHA)	S	(626) 287-6260 sgveha@hotmail.com http://home.flash.net/~sgveha/	12-step program for people who suffer from emotional and mental problems not related to substance abuse
Emotions Anonymous (EA)	S	(651) 647-9712 infodf3498fjsd@emotionsanonymous.org http://www.emotionsanonymous.org/	12-step program for people working toward recovery from emotional difficulties
Families for Depression Awareness	C, E	(781) 890-0220 info@familyaware.org http://www.familyaware.org/	Helps families recognize and cope with depressive disorders to get people well and prevent suicides; activities include education, advocacy, and referrals

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Organization	Type	Contact information	Description
Families Helping Families (FHF)	C	(619) 294-8000 fhf@jennadruck.org http://jdf-fhf.org/	Part of the Jenna Druck Foundation; provides comprehensive support services to bereaved families, individuals, and communities who have experienced the loss of a loved one; provides support groups, community education, and support and education for the workplace and classroom
Freedom From Fear (FFF)	E, C	(718) 351-1717 (ext. 19) help@freedomfromfear.org http://www.freedomfromfear.org/	National not-for-profit mental health advocacy association that positively impacts the lives of people affected by anxiety, depressive, and related disorders through advocacy, education, research, referrals, and community support
Friends for Survival	S	(800) 646-7322 (916) 392-0664 ffs@truevine.net http://www.friendsforsurvival.org/	Provides peer support services to those who have lost friends or family to suicide
Friendship Network	S	info@friendshipnetwork.org http://www.friendshipnetwork.org/	Introduces people with mental illness to each other to help them develop friendships, social skills, and self-confidence
Gamblers Anonymous (GA)	S	(213) 386-8789 isomain@gamblersanonymous.org http://www.gamblersanonymous.org/	A 12-step fellowship whose members come together at meetings to help themselves and each another to stop compulsive gambling
Gift From Within (GFW)	C, S	(207) 236-8858 JoyceB3955@aol.com http://www.giftfromwithin.org/	International nonprofit organization for people who have, are at risk for, or care for individuals with posttraumatic stress disorder; develops and disseminates educational material; peer support network of survivors
Gilda's Club	C	(888) GILDA-4-U info@gildasclub.org http://www.gildasclub.org/	Creates welcoming communities of free support for people living with cancer; provides networking and support groups, workshops, education, and social activities
Global and Regional Asperger Syndrome Partnership (GRASP)	E, S	(888) 474-7277 info@grasp.org http://www.grasp.org/	Educational and advocacy group serving individuals on the autism spectrum; provides a support group network, educational outreach, and information

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

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Organization	Type	Contact information	Description
Gray Panthers	E	(800) 280-5362 info@graypanthers.org http://www.graypanthers.org/	Advocacy organization seeking intergenerational approaches to achieving social and economic justice and peace; strives to create a humane society that puts the needs of people over profits, responsibility over power, and democracy over institutions
GriefNet	C, S	cendra@griefnet.org http://www.griefnet.org/	Internet community of persons dealing with grief, death, and major loss; has resources, referrals, and support groups
GriefShare	C	(800) 395-5755 info@griefshare.org http://www.griefshare.org/	Holds seminars and support groups led by trained group leaders for people grieving the death of a loved one; part of the Church Initiative based in North Carolina
GROW in America	S	(888) 741-GROW http://www.growinamerica.org/	International mental health movement with a network of member-run support groups in four different countries (United States, Australia, New Zealand, and Ireland)
HealthyWomen (HW)	E	(877) 986-9472 http://www.healthywomen.org/	Independent health information source for women, providing unbiased and accurate health information
Hospice Foundation of America	C, E	(800) 854-3402 (202) 457-5811 info@hospicefoundation.org http://www.hospicefoundation.org/	Provides leadership in the development and application of hospice and its philosophy of care with the goal of enhancing the U.S. health care system and the role of hospice; provides professional development, public education and information, research, and publications
International Critical Incident Stress Foundation Inc. (ICISF)	C, E	(410) 750-9600 info@icisf.org http://www.icisf.org/	Provides leadership, education, training, consultation, and support services in comprehensive crisis intervention and disaster behavioral health services to the emergency response professions, other organizations, and communities worldwide
International OCD Foundation	S, C, R	(617) 973-5801 info@ocfoundation.org http://www.ocfoundation.org/	Formerly the Obsessive-Compulsive Foundation; not-for-profit organization of people with obsessive-compulsive disorder (OCD) and related disorders, their families, friends, professionals, and other concerned individuals; educates the public and professional communities, provides assistance to individuals with OCD, and supports research into the causes and effective treatments of OCD
International Stress Management Association (ISMA)	E	44 01179 697284 stress@isma.org.uk http://www.isma.org.uk/	Registered charity with a multidisciplinary professional membership that includes the United Kingdom and the Republic of Ireland; promotes best practice in the prevention and reduction of human stress; sets professional standards and disseminates information

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Clearinghouse/Resources/Referrals, E = education/advocacy/policy

Organization	Type	Contact information	Description
Kara	S, C	(650) 321-5272 http://www.kara-grief.org/	Helps people deal with loss and grief through support and education; individual peer counseling and support groups provided by trained volunteers are free of charge; located in Palo Alto, California
Kempe Postpartum Depression Intervention Program	C	(303) 864-5300 questions@kempe.org http://www.kempe.org/	Provides evidenced-based group psychotherapy and mental health evaluations for mothers with postpartum depression; located in Aurora, Colorado
LifeRing Secular Recovery	S	(510) 763-0779 service@lifering.org http://www.unhooked.com/	Nonreligious self-help recovery organization for individuals who seek group support to achieve abstinence from alcohol and other addictive drugs
Marijuana Anonymous (MA)	S	(800) 766-6779 office@marijuana-anonymous.org http://www.marijuana-anonymous.org/	A 12-step recovery program for marijuana
Mental Health America (MHA)	C	(800) 969-6642 infoctr@mentalhealthamerica.net http://www.nmha.org/	Provides advocacy, public education, and support for Americans with mental health conditions; formerly known as the National Mental Health Association
Mental Health Gap Action Programme (mhGAP)	E	41 22 791 21 11 mnh@who.int http://www.who.int/mental_health/mhgap/	World Health Organization program to increase services for mental, neurological, and substance use disorders in countries with low and middle incomes
Moderation Management (MM)	S	mm@moderation.org http://www.moderation.org/	Behavioral change program and national support group network for people who have made the decision to reduce their drinking
Mothers Against Drunk Driving (MADD)	C, E	(800) 438-6233 http://www.madd.org/	Advocacy and education activities to stop drunk driving, support the victims of drunk driving, and prevent underage drinking; provides services to help victims cope with grief
NAADAC: The Association for Addiction Professionals	P	(800) 548-0497 naadac@naadac.org http://www.naadac.org/	Professional organization serving addiction counselors, educators, and other addiction-focused health care professionals
Nar-Anon Family Groups	S	(800) 477-6291 (310) 534-8188 naranonWSO@gmail.com http://www.nar-anon.org/	A 12-step fellowship whose members are relatives and friends who are concerned about the addiction or drug problem of another
Narconon Exposed	S	dst@cs.cmu.edu http://www.cs.cmu.edu/~dst/Narconon/	Provides information about Narconon and keeps a watchful eye on Narconon activities around the world

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

Organization	Type	Contact information	Description
Narconon International	S	(800) 391-4893 info@narconon.org http://www.narconon.org/	Nonprofit public benefit organization dedicated to eliminating drug abuse through prevention, education, and rehabilitation; based on the work of Church of Scientology founder L. Ron Hubbard
Narcotics Anonymous (NA)	S	U.S. (California): (818) 773-9999 Europe (Brussels): 32 2 646 6012 fsmail@na.org http://www.na.org/	International 12-step recovery program for addiction with more than 43,900 weekly meetings in over 127 countries worldwide
National Alliance for Research on Schizophrenia and Depression (NARSAD)	R	(516) 829-0091 info@narsad.org http://www.narsad.org/	Supports research into prevention and treatment of mental illnesses such as schizophrenia, depression, and bipolar disorder
National Alliance on Mental Illness (NAMI)	S, C	Phone: (703) 524-7600 Help line: (800) 950-6264 info@nami.org http://www.nami.org/	Provides support, education, and advocacy to people with mental illness and their families
National Anger Management Association (NAMA)	P, C	(646) 485-5116 namass@namass.org http://www.namass.org/	Nonprofit professional organization for the advancement of anger management services, research, and professional anger management services; has a code of ethical standards, a certification program, and a directory of anger management specialists
National Association of School Psychologists (NASP)	P, E	(866) 331-NASP center@naspweb.org http://www.nasponline.org/	A professional organization that supports school psychologists and provides resources and services to enhance the mental health and educational needs of all children and youth; promotes prevention and early intervention, problem-solving approaches and collaboration, and research-based strategies and programs
National Center for Trauma-Informed Care (NCTIC)	E	(866) 254-4819 NCTIC@NASMHPD.org http://mentalhealth.samhsa.gov/nctic/	Technical assistance center that builds awareness of trauma-informed care and promotes the implementation of trauma-informed practices in programs and services; part of Center for Mental Health Services

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Organization	Type	Contact information	Description
National Child Traumatic Stress Network (NCTSN)	E, C	California: (310) 235-2633 North Carolina: (919) 682-1552 http://www.nctsnet.org/nccts/	Collaboration of academic and community-based service centers that raise the standard of care and increase access to services for traumatized children and their families across the United States; develops and disseminates evidence-based interventions, trauma-informed services, and public and professional education
National Coalition for the Homeless (NCH)	E, C	(202) 462-4822 info@nationalhomeless.org http://www.nationalhomeless.org/	A national organization committed to ending homelessness; NCH helps those who are currently experiencing homelessness or who are at risk for being homeless; main activities include public education, policy advocacy, and grassroots organizing
National Council on Alcoholism and Drug Dependence (NCADD)	C	(212) 269-7797 national@ncadd.org http://www.ncadd.org/	Fights the stigma and disease of alcoholism and drug addiction; provides education, information, and help to the public; and advocates prevention, intervention, and treatment through a nationwide network of affiliates
National Eating Disorders Association (NEDA)	C, E	(206) 382-3587 http://www.nationaleatingdisorders.org/	A nonprofit organization that provides support and resources to those affected by eating disorders and to educate concerned individuals and the general public about eating disorders
National Education Alliance for Borderline Personality Disorder (NEA-BPD)	C	info@neabpd.org http://www.borderlinepersonalitydisorder.com/	Raises public awareness, provides education, promotes research, and enhances the quality of life of those affected by borderline personality disorder
National Empowerment Center (NEC)	S, C	(800) 769-3728 info4@power2u.org http://www.power2u.org/	A consumer/survivor/ex-patient-run organization that carries a message of recovery, empowerment, hope, and healing by providing referrals and information to people who have been labeled with mental illness
National Family Caregivers Association (NCFA)	C, E	(800) 896-3650 info@thefamilycaregiver.org http://www.thefamilycaregiver.org/	Educates, supports, empowers, and speaks up for Americans who care for loved ones with a chronic illness, disability, or old age; offers caregiving resources and advocacy
National Institute of Mental Health (NIMH)	R	(866) 615-6464 (301) 443-4513 nimhinfo@nih.gov http://www.nimh.nih.gov/	Generates research on the causes of mental disorders and develops new and better interventions to prevent and treat mental illnesses

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Organization	Type	Contact information	Description
National Institute of Neurological Disorders and Stroke (NINDS)	R	(800) 352-9424 http://www.ninds.nih.gov/	Conducts and supports research on brain and nervous system disorders
National Institute on Alcohol Abuse and Alcoholism (NIAAA)	R	(301) 443-3860 http://www.niaaa.nih.gov/	Provides leadership in the national effort to reduce alcohol-related problems by conducting and supporting research in genetics, neuroscience, epidemiology, health risks and benefits of alcohol consumption, prevention, and treatment; disseminates research findings to health care providers, researchers, policy makers, and the public
National Institute on Drug Abuse (NIDA)	R	English: (301) 443-1124 Spanish: (240) 221-4007 information@nida.nih.gov http://www.nida.nih.gov/	Supports and conducts research on drug abuse and addiction; disseminates research results to improve drug abuse and addiction prevention, treatment, and policies
National Mental Health Consumers' Self-Help Clearinghouse	S, C	(800) 553-4539 info@mhselfhelp.org http://mhselfhelp.org/	Extensive library of information on self-help and advocacy topics, including peer counseling, deinstitutionalization, fund-raising, involuntary treatment, patient rights, and using the media
National Organization for Victim Assistance (NOVA)	C, E	(800) 879-6682 nova@try-nova.org http://www.trynova.org/	Private, nonprofit organization of victim and witness assistance programs and practitioners, criminal justice agencies and professionals, mental health professionals, researchers, former victims and survivors, and others committed to the recognition and implementation of victim rights and services
National Transportation Safety Board (NTSB)	E	(202) 314-6000 http://www.ntsb.gov/	Investigates every civil aviation accident in the United States and significant accidents in the other modes of transportation (railroad, highway, marine, and pipeline) and issues safety recommendations aimed at preventing future accidents
Neurotics Anonymous	S	(310) 516-1051 http://www.neuroticosanonimosusa.com/neurotics.html	12-step program for people dealing with emotional problems
Nicotine Anonymous (NicA)	S	(877) 879-6422 info@nicotine-anonymous.org http://www.nicotine-anonymous.org/	12-step recovery program for nicotine

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Organization	Type	Contact information	Description
North American Riding for the Handicapped Association (NARHA)	C, E	(800) 369-7433 http://www.narha.org/	Provides equine-assisted activity and therapy programs in the United States and Canada; fosters safe, professional, ethical, and therapeutic equine activities through education, communication, research, and standards
Obsessive Compulsive Anonymous (OCA)	S	(516) 739-0662 west24th@aol.com http://obsessivecompulsiveanonymous.org/	12-step program for people with obsessive-compulsive disorder
ONE Freedom	C	(888) 334-VETS http://www.onefreedom.org/	Offers military personnel and families resources, referrals, and training to build strength, resilience, and an understanding of how to maintain balance in the face of military deployments and other lifestyle challenges
Overeaters Anonymous (OA)	S	(505) 891-2664 http://www.oa.org/	12-step program for compulsive eaters
Pacific Post Partum Support Society (PPPSS)	C	(604) 255-7999 http://www.postpartum.org/	Nonprofit society providing support to women and families experiencing depression or anxiety related to the birth or adoption of a baby; provides training and information for professionals and community education on postpartum depression
Parents Anonymous Inc.	R, C, S	(909) 621-6184 Parentsanonymous@parentsanonymous.org http://www.parentsanonymous.org/	Child abuse prevention organization providing training, technical assistance, research, and publications
Pathways to Peace	E	(415) 461-0500 nfo@pathwaystopeace.org http://www.pathwaystopeace.org/	International peace-building, educational, and consulting organization; collaborates with other organizations and participates in United Nations conferences
Postpartum Health Alliance (PHA)	C	(619) 254-0023 info@postpartumhealthalliance.org http://www.postpartumhealthalliance.org/	Nonprofit organization of health professionals who educate other health professionals and the public about the mood disorders that can follow childbirth; provides educational materials and referrals
Postpartum Support International (PSI)	C, E	(800) 944-4773 http://postpartum.net/	Educates and builds awareness of the emotional and psychological changes women go through during and after pregnancy; provides information, resources, and education and advocates for research and legislation to support perinatal mental health; a help line provides referrals

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Organization	Type	Contact information	Description
Rainbows International	C	(847) 952-1770 info@rainbows.org http://www.rainbows.org/	International, not-for-profit organization fostering emotional healing among children grieving a loss from a life-altering crisis; offers comprehensive grief support curricula and training
Rational Recovery (RR)	S	(530) 621-2667 http://www.rational.org/	Source of counseling, guidance, and direct instruction on self-recovery from addiction to alcohol and other drugs through planned, permanent abstinence
Recovery International	S	(866) 221-0302 info@lowselfhelpsystems.org http://www.lowselfhelpsystems.org/	Formerly Recovery Inc.; through community, telephone, and online meetings, helps individuals manage feelings or impulses that impair the ability to live a normal life using a cognitive-behavioral, peer-to-peer, self-help training system
San Francisco Bay Area Center for Cognitive Therapy	C	(510) 652-4455 http://www.sfbacct.com/	Group of clinical psychologists working together in a partnership; provides cognitive-behavioral therapy (CBT), conducts training and research, and disseminates information about CBT; located in Oakland, California
Schizophrenia: Open the Doors	E	http://www.openthedoors.com/english/	International program to fight stigma and discrimination of schizophrenia; provides information and list of resources; advocates for change
Self-Help for Women with Breast or Ovarian Cancer (SHARE)	C	(866) 891-2392 info@sharecancersupport.org http://www.sharecancersupport.org/	Brings women affected by breast or ovarian cancer, their families, and friends together with others who have experienced breast or ovarian cancer; provides participants with the opportunity to receive and exchange information, support, strength, and hope
Sex and Love Addicts Anonymous (SLAA)	S	http://www.slaafws.org/	12-step program of people helping each other deal with sex addiction or love addiction
SMART Recovery	S	(440) 951-5357 http://www.smartrecovery.org/	Offers free face-to-face and online mutual help groups for people recovering from all types of addictive behaviors
Substance Abuse and Mental Health Services Administration (SAMHSA)	R, C	(877) 726-4727 SHIN@samhsa.hhs.gov http://www.samhsa.gov/	Supports state and community efforts to expand and enhance prevention and early intervention programs and to improve the quality, availability, and range of substance abuse treatment, mental health, and recovery support services in local communities

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Organization	Type	Contact information	Description
Substance Abuse Treatment Facility Locator	C	English: (800) 662-HELP Spanish: (800) 662-9832 TDD: (800) 228-0427 http://dasis3.samhsa.gov/	Referral help lines (phone) and Internet referrals for substance abuse treatment programs in the United States
Survivors Art Foundation (SAF)	C	safe@survivorsartfoundation.org http://www.survivorsartfoundation.org/	Nonprofit organization empowering trauma survivors with effective expressive outlets via an Internet art gallery, outreach programs, national exhibitions, publications, and development of employment skills
Survivors of Bereavement by Suicide (SOBS)	S	National Office: 44 0115 944 1117 National Helpline (UK): 44 0844 561 6855 sobs.admin@care4free.net http://www.uk-sobs.org.uk/	Self-help organization breaking the isolation of those bereaved by the suicide of a close relative or friend; provides group meetings, a telephone help line, and information; located in England
The Bright and Beautiful Therapy Dogs, Inc.	C	(888) PET-5770 Info@Golden-Dogs.org http://www.golden-dogs.org/	Evaluates and trains therapy dogs; located in New Jersey
The Center for Victims of Violence and Crime (CVVC)	C, E	(412) 392-8582 information@cvvc.org http://www.cvvc.org/	Provides victim advocacy and support services, crisis intervention, counseling, and community education programs that address the causes and impacts of all types of violence and crime
The Compassionate Friends (TCF)	S	(877) 969-0010 http://www.compassionatefriends.org/	Assists families toward the positive resolution of grief following the death of a child
The Dougy Center for Grieving Children and Families	C	(866) 775-5683 help@dougy.org http://www.dougy.org/	Through peer support groups, education, and training, provides a safe place for children, teens, young adults, and their families who are grieving a death to share their experiences
The Jenna Druck Foundation	E, C	(619) 294-8000 info@jennadruck.org http://jennadruck.org/	Includes two programs: Young Women's Leadership (YWL) provides leadership training to upcoming young women, and Families Helping Families (FHF) serves people in their journey through grief
The Latham Foundation for the Promotion of Humane Education	E	(510) 521-0920 info@latham.org http://www.latham.org/	Clearinghouse for information about humane issues and activities, the human–companion animal bond, animal-assisted therapy, and connections between child and animal abuse and other forms of violence

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

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Organization	Type	Contact information	Description
The Mood Disorders Support Group of New York City (MDSG)	S	(212) 533-MDSG info@mdsg.org http://www.mdsg.org/	Nonprofit self-help organization for individuals with depression and bipolar disorder, their families, and friends; helps people accept and manage their illness and improve the quality of their lives; an independent affiliate of DBSA
The Shaken Baby Alliance	E	(877) 6-END-SBS info@shakenbaby.com http://shakenbaby.org/	Provides support to victim family members of shaken baby syndrome; has information and training programs for professionals and advocates for legislation to enact laws and policies to protect children, prevent abuse, and hold perpetrators criminally responsible for the abuse of children
The Wellness Community	C	(202) 659-9709 help@thewellnesscommunity.org http://www.thewellnesscommunity.org/	International nonprofit organization providing free support, education, and hope to people with cancer and their loved ones; holds professionally led support groups, educational workshops, nutrition and exercise programs, and stress-reduction classes
Therapet Animal Assisted Therapy Foundation	E	therapet@embarqmail.com http://www.therapet.com/	Establishes and communicates standards of practice for use of specially trained animals in health care settings; educates health care professionals, facility leaders, and communities on opportunities and benefits of animal-assisted therapy; trains, certifies, and assures competency of human-animal volunteer teams
Therapy Dogs International Inc. (TDI)	E	(973) 252-9800 tdi@gti.net http://www.tdi-dog.org/	Regulates, tests, and registers therapy dogs and their volunteer handlers for the purpose of visiting nursing homes, hospitals, and other institutions
Therapy Dogs Inc. (TDInc)	E	(877) 843-7364 therapydogsinc@qwestoffice.net http://www.therapydogs.com/	Provides registration, support, and insurance for members involved in volunteer animal–assisted activities, including visits to hospitals, special needs centers, schools, and nursing homes
Tragedy Assistance Program for Survivors (TAPS)	C, S	(202) 588-8277 info@taps.org http://www.taps.org/	Provides comfort and care to families of military men and women through peer-based emotional support, case work assistance, crisis intervention, and grief and trauma resources

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Organization	Type	Contact information	Description
U.S. VETS	C	(213) 542-2600 http://www.usvetsinc.org/	Provides housing, counseling, and job assistance to homeless veterans; programs foster the skills necessary for veterans to return to the community and remain self-sufficient
Voice of the Retarded (VOR)	E	(877) 399-4VOR info@vor.net http://www.vor.net/	Advocates, educates, and assists families, organizations, public officials, and individuals concerned with the quality of life of and choice for persons with mental retardation within residential options, including home, community-based, and facility-based care
Wings of Light	S, C	http://www.wingsoflight.org/	Nonprofit organization serving as a united voice for those whose lives have been touched by aircraft accidents; provides support networks and referrals
Women For Sobriety, Inc. (WFS)	S	(215) 536-8026 http://www.womenforsobriety.org/	Self-help program for women with alcoholism; based on a 13-statement program that encourages emotional and spiritual growth
World Fellowship for Schizophrenia and Allied Disorders (WFSAD)	C, S, E	(416) 961-2855 info@world-schizophrenia.org http://www.world-schizophrenia.org/	Increases knowledge, understanding, and compassion and reduces the fear, stigma, discrimination, and abuse that accompany schizophrenia and other serious mental illnesses; provides self-help groups, workshops, and education and advocates for better treatment and appropriate services
Young Women's Leadership (YWL)	E	(619) 294-8000 ywl@jennadruck.org http://jdfleadership.org/	Part of the Jenna Druck Foundation; provides leadership training and opportunities to upcoming young women
Youth Enrichment Services (YES)	S, C	(212) 620-7310 YES@gaycenter.org http://www.gaycenter.org/youth/	Provides lesbian, gay, bisexual, and transgender young people with community support to foster healthy development in a safe, affirming, sex-positive, alcohol- and drug-free environment; located in New York City

Organization Types: P = Professional, R = Research/Scientific, S = Self-Help/Support, C = Consumer Resources/Referrals, E = education/advocacy/policy

APPENDIX C: SUGGESTED READINGS

This appendix contains a list of suggested books for those who are interested in pursuing emotion topics in more depth. The books are organized into several categories: self-help, first-person accounts, general emotion books for general audiences, general emotion books for academic audiences, biographies, and textbooks. This list is not intended to be comprehensive; the books listed are those that are believed to be most relevant and accessible to a general audience or classics in the field (or both). The two categories of general emotion books (for general and for academic audiences) were created as a guide; however, some books fit in both categories. The interested reader should check both lists.

Gretchen M. Reevy

Self-Help

Antony, M. M., & Swinson, R. P. (2008). *The shyness and social anxiety workbook: Proven, step-by-step techniques for overcoming your fear.* Oakland, CA: New Harbinger.

Beattie, M. (1992). *Codependents' guide to the twelve steps.* New York: Fireside.

Begley, S. (2007). *Train your mind, change your brain.* New York: Ballantine.

Behary, W. T. (2008). *Disarming the narcissist: Surviving and thriving with the self-absorbed.* Oakland, CA: New Harbinger.

Bourne, E. J. (2005). *The anxiety and phobia workbook.* Oakland, CA: New Harbinger.

Bower, S. A., & Bower, G. H. (2004). *Asserting yourself—A practical guide for positive change* (Updated ed.). Cambridge, MA: De Capo Press.

Christopher, J. (1988). *How to stay sober: Recovery without religion.* Amherst, NY: Prometheus Books.

Dalai Lama, H. H., & Cutler, H. C. (1998). *The art of happiness: A handbook for living.* New York: Riverhead Books.

Davis, M., Eshelman, E. R., & McKay, M. (2008). *The relaxation and stress reduction workbook* (6th ed.). Oakland, CA: New Harbinger.

Elliott, C. H., & Smith, L. L. (2002). *Overcoming anxiety for dummies.* New York: John Wiley.

Ellis, A., & Harper, R. A. (1975). *A guide to rational living.* Chatsworth, CA: Wilshire.

Frankl, V. E. (1988). *The will to meaning: Foundations and applications of logotherapy.* New York: Penguin Books.

Gordon, J. S. (2008). *Unstuck: Your guide to the seven-stage journey out of depression.* New York: Penguin Press.
Hyman, B. M., & Pedrick, C. (2005). *The OCD workbook: Your guide to breaking free from obsessive-compulsive disorder* (2nd ed.). Oakland, CA: New Harbinger.
Kabat-Zinn, J. (2005). *Wherever you go, there you are: Mindfulness meditation in everyday life.* Concord, NH: Hyperion.
McDermott, D., & Snyder, C. R. (2000). *The great big book of hope.* Oakland, CA: New Harbinger.
McKay, M., Davis, M., & Fanning, P. (2007). *Thoughts & feelings: Taking control of your moods & your life* (3rd ed.). Oakland, CA: New Harbinger.
Miller, T. (1996). *How to want what you have.* New York: Harper Perennial.
Pines, A. M. (1998). *Romantic jealousy: Causes, symptoms, cures.* New York: Routledge.
Rahula, W. (1974). *What the Buddha taught.* New York: Grove Press.
Rolfe, S. (2005). *Rethinking attachment for early childhood practice: Promoting security, autonomy, and resilience in young children.* Crows Nest, Australia: Allen and Unwin.
Rubin, K. H., with Thompson, A. (2003). *The friendship factor: Helping our children navigate their social worlds and why it matters for their success.* New York: Penguin.
Seligman, M. (2007). *What you can change and what you can't: The complete guide to successful self-improvement.* New York: Vintage.
Snyder, C. R. (2003). *The psychology of hope: You can get there from here.* New York: Free Press.
Torrey, E. F. (2006). *Surviving schizophrenia: A manual for families, patients, and providers* (5th ed.). New York: HarperCollins.
Williams, R. B., & Williams, V. (1993). *Anger kills: Seventeen strategies for controlling the hostility that can harm your health.* New York: HarperPerennial Library.

First-Person Accounts

Bell, J. (2007). *Rewind, replay, repeat: A memoir of obsessive-compulsive disorder.* Center City, MN: Hazelden.
Bridge, A. (2008). *Hope's boy.* New York: Hyperion. (emotional abuse)
Casey, N. (2002). *Unholy ghost: Writers on depression.* New York: Harper Perennial.
Colas, E. (1999). *Just checking: Scenes from the life of an obsessive-compulsive.* New York: Washington Square Press.
Dodds, M. (2007). *Schizoaffective: A happier and healthier life.* Frederick, MD: PublishAmerica.
Dully, H., & Fleming, C. (2007). *My lobotomy.* New York: Crown.
Fox, M. J. (2002). *Lucky man: A memoir.* New York: Hyperion. (Parkinson's disease)
Gordon, B. (1979). *I'm dancing as fast as I can.* New York: Harper and Row. (addiction to Valium)
Grandin, T. (2006). *Thinking in pictures: My life with autism* (Exp. ed.). New York: Vintage.
Jamison, K. R. (1997). *An unquiet mind: A memoir of moods and madness.* New York: Random House. (bipolar disorder)
Kaysen, S. (1994). *Girl, interrupted.* New York: Vintage. (borderline personality disorder)
Kirberger, K. (2003). *No body's perfect: Stories by teens about body image, self-acceptance, and the search for identity.* New York: Scholastic Paperbacks.
McFall, E. E. (2007). *I can still hear their cries, even in my sleep: A journey into PTSD.* Parker, CO: Outskirts Press.
Rand, R. (2004). *Dancing away an anxious mind: A memoir about overcoming panic disorder.* Madison: University of Wisconsin Press.

Reiland, R. (2004). *Get me out of here: My recovery from borderline personality disorder.* Center City, MN: Hazelden.
Shepard, J. (2009). *The meaning of Matthew: My son's murder in Laramie, and a world transformed.* New York: Hudson Street Press.
Snyder, K. (2007). *Me, myself, and them: A firsthand account of one young person's experience with schizophrenia.* New York: Oxford University Press.
Tammet, D. (2007). *Born on a blue day: Inside the extraordinary mind of an autistic savant.* New York: Free Press.
Wandzilak, K., & Curry, C. (2006). *The lost years: Surviving a mother and daughter's worst nightmare.* Santa Monica, CA: Jeffers Press. (alcoholism)

General Books for General Audiences

Alcoholics Anonymous World Services Inc. (2001). *Alcoholics Anonymous.* New York: Author. (Original work published 1935)
Barber, C. (2009). *Comfortably numb: How psychiatry medicated a nation.* New York: Vintage.
Barnes, D.S. (2006). *The great stink of Paris and the marriage of filth and germs.* Baltimore: Johns Hopkins University Press.
Barton, W.E. (1987). *The history and influence of the American Psychiatric Association.* Arlington, VA: American Psychiatric Publishing.
Beam, A. (2003). *Gracefully insane: Life and death inside America's premier mental hospital.* Cambridge, MA: Perseus Books Group.
Beck, A.T. (2000). *Prisoners of hate: The cognitive basis of anger, hostility, and violence.* New York: HarperCollins.
Becker, M. (2002). *The healing power of pets: Harnessing the amazing ability of pets to make and keep people happy and healthy.* New York: Hyperion.
Bernstein, P.L. (1998). *Against the gods: The remarkable story of risk.* New York: John Wiley.
Breggin, P.R. (2001). *The antidepressant fact book: What your doctor won't tell you about Prozac, Zoloft, Paxil, Celexa, and Luvox.* Cambridge, MA: De Capo Press.
Briggs, J.L. (1970). *Never in anger: Portrait of an Eskimo family.* Cambridge, MA: Harvard University Press.
Brockman, J. (Ed.). (2004). *Curious minds: How a child becomes a scientist.* New York: Vintage Books.
Buss, D.M. (1994). *The evolution of desire: Strategies of human mating.* New York: Basic Books.
Buss, D.M. (2000). *The dangerous passion: Why jealousy is as necessary as love and sex.* New York: Free Press.
Carr, A. (2004). *Positive psychology: The science of happiness and human strengths.* New York: Brunner-Routledge.
Cooper, R. (2005). *Classifying madness: A philosophical examination of the diagnostic and statistical manual of mental disorders.* Dordrecht, Netherlands: Springer.
Csikszentmihalyi, M. (1991). *Flow: The psychology of optimal experience.* New York: Harper Perennial.
Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention.* New York: HarperCollins.
Damasio, A. (1994). *Descartes' error: Emotion, reason and the human brain.* New York: Putnam.
Dawkins, R. (1976). *The selfish gene.* New York: Oxford University Press. (evolutionary psychology)
Dukakis, K., & Tye, L. (2006). *Shock: The healing power of electroconvulsive therapy.* New York: Penguin.
Ehrenreich, B. (2009). *Bright-sided: How the relentless promotion of positive thinking has undermined America.* New York: Metropolitan Books.

Ekman, P. (2007). *Emotions revealed: Recognizing faces and feelings to improve communication and emotional life* (2nd ed.). New York: Holt Paperbacks.
Ekman, P. (2009). *Telling lies: Clues to deceit in the marketplace, politics, and marriage* (Rev. ed.). New York: W. W. Norton.
Ekman, P., & Friesen, W. V. (1975). *Unmasking the face.* Englewood Cliffs, NJ: Prentice Hall. (evolutionary basis of facial expression)
Emotions Anonymous Ltd. (1994). *Emotions Anonymous.* St. Paul, MN: Author.
Festinger, L., Riecken, H. W., & Schachter, S. (1956). *When prophecy fails.* Minneapolis: University of Minnesota Press. (cognitive dissonance)
Feuestein, G. (2001). *The yoga tradition: Its history, literature, philosophy, and practice.* Prescott, AZ: Holm Press.
Frankl, V. E. (1962). *Man's search for meaning.* New York: Washington Square. (logotherapy)
Frey, W. H. (1985). *Crying: The mystery of tears.* Minneapolis, MN: Winston Press.
Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ.* New York: Bantam.
Haidt, J. (2006). *The happiness hypothesis: Finding modern truth in ancient wisdom.* New York: Basic Books.
Harary, K., & Robinson, E. D. (2005). *Who do you think you are?* London: Penguin Group. (Five Factor model of personality)
Harris, J. R. (2009). *The nurture assumption: Why children turn out the way they do.* New York: Free Press.
Healy, J. (2008). *Mania: A short history of bipolar disorder.* Baltimore: Johns Hopkins University Press.
Heyes, C. M., & Galef, B. G. (1996). *Social learning in animals: The roots of culture.* San Diego, CA: Academic Press.
Humphreys, K. (2003). *Circles of recovery: Self-help organizations for addictions.* Cambridge, England: Cambridge University Press.
Hunt, M. (2007). *The story of psychology.* New York: Doubleday Anchor.
Kagan, J. (2008). *What is emotion? History, measures, meanings.* New Haven, CT: Yale University Press.
Kesey, K. (1962). *One flew over the cuckoo's nest.* New York: Viking.
Kirschenbaum, H., & Henderson, V. L. (1989). *The Carl Rogers reader.* Boston: Houghton Mifflin.
Kramer, P. D. (1997). *Listening to Prozac: The landmark book about antidepressants and the remaking of the self.* New York: Penguin.
Kübler-Ross, E. (1969). *On death and dying.* New York: Macmillan.
LeDoux, J. (1996). *The emotional brain: The mysterious underpinnings of emotional life.* New York: Touchstone.
Levin, J., & McDevitt, J. (2002). *Hate crimes revisited: America's war on those who are different.* Boulder, CO: Westview Press.
Lewis, M. (1992). *Shame: The exposed self.* New York: Free Press.
Lutz, T. (2001). *Crying: A natural and cultural history of tears.* New York: W. W. Norton.
Macmillan, M. (2000). *An odd kind of fame: Stories of Phineas Gage.* Cambridge, MA: MIT Press.
Maslow, A. H. (1962). *Toward a psychology of being.* Princeton, NJ: Van Nostrand. (humanistic psychology)
McEwen, B., & Lasley, E. N. (2002). *The end of stress as we know it.* Washington, DC: Joseph Henry Press.
McMahon, D. M. (2006). *Happiness: A history.* New York: Atlantic Monthly Press.
Mitchell, S. A., & Black, M. J. (1996). *Freud and beyond: A history of modern psychoanalytic thought.* New York: Basic Bo

Morris, T. (1999). *Philosophy for dummies.* Foster City, CA: IDG Books.
Oatley, K. (2004). *Emotions: A brief history.* Malden, MA: Blackwell.
Overall, K. L. (1997). *Clinical behavioral medicine for small animals.* Portland, OR: Mosby.
Paul, A. M. (2004). *The cult of personality: How personality tests are leading us to miseducate our children, mismanage our companies, and misunderstand ourselves.* New York: Free Press.
Payne, C. (2009). *Asylum: Inside the closed world of state mental hospitals.* Boston: MIT Press.
Pease, B., & Pease, A. (2006). *The definitive book of body language.* New York: Bantam Dell.
Peck, M. D. (1978). *The road less travelled.* New York: Touchstone.
Pert, C. B. (1997). *Molecules of emotion.* New York: Scribner.
Peterson, G. W., & Fabes, R. (2003). *Emotions and the family.* Binghamton, NY: Haworth Press.
Regan, P. C., & Berscheid, E. (1999). *Lust: What we know about human sexual desire.* Newbury Park, CA: Sage.
Rogers, C. R. (1961). *On becoming a person: A therapist's view of psychotherapy.* Boston: Houghton Mifflin.
Sacks, O. (2007). *Musicophilia: Tales of music and the brain.* New York: Vintage Books.
Sapolsky, R. M. (2004). *Why zebras don't get ulcers.* New York: Henry Holt. (stress)
Scheper-Hughes, N. (1992). *Death without weeping.* Berkeley: University of California Press. (cultural perspective on sympathy; case study of a culture)
Seligman, M.E.P. (1991). *Learned optimism.* New York: Knopf.
Sharples, R. W. (2007). *Stoics, Epicureans, and Skeptics: An introduction to Hellenistic philosophy.* Boca Raton, FL: Taylor and Francis.
Shorter, E., & Healy, D. (2007). *Shock therapy: A history of electroconvulsive treatment in mental illness.* New Brunswick, NJ: Rutgers University Press.
Sidky, H. (1997). *Witchcraft, lycanthropy, drugs and disease: An anthropological study of the European witch hunts.* New York: Peter Lang.
Skinner, B. F. (1948). *Walden Two.* New York: Macmillan.
Snyder, C. R. (2003). *The psychology of hope: You can get there from here.* New York: Free Press.
Solomon, A. (2001). *The noonday demon.* New York: Touchstone. (depression)
Stevenson, J. (2005). *The complete idiot's guide to philosophy.* New York: Alpha.
Tart, C. T. (2001). *States of consciousness.* Available from http://backinprint.com (Original work published 1979)
Temple-Raston, D. (2001). *A death in Texas: A story of race, murder, and a small town's struggle for redemption.* New York: Henry Holt.
Tick, E. (2005). *War and the soul: Healing our nation's veterans from post-traumatic stress disorder.* Wheaton, IL: Quest Books.
Tone, A. (2009). *The age of anxiety: A history of America's turbulent affair with tranquilizers.* New York: Basic Books.
Tsu, L. (1989). *Tao te ching.* New York: Vintage.
Wallenstein, G. (2003). *Mind, stress, and emotions: The new science of mood.* Boston: Commonwealth Press.
Yalom, I. (1980). *Existential psychotherapy.* New York: Basic Books.
Yalom, I. D., & Leszcz, M. (2005). *Theory and practice of group psychotherapy* (5th ed.). New York: Basic Books.

General Books for Academic Audiences

Allport, G. W. (1954). *The nature of prejudice.* Reading, MA: Addison-Wesley.
Andersen, P., Morris, R., Amaral, D., Bliss, T., & O'Keefe, J. (Eds.). (2007). *The hippocampus book.* New York: Oxford University Press.
Arnold, M. B. (1960). *Emotion and personality.* New York: Columbia University Press.
Bargh, J. A. (Ed.). (2007). *Social psychology and the unconscious: The automaticity of higher mental processes.* New York: Psychology Press.

Binswanger, L. (1942). *Foundations and knowledge of human existence.* Zurich, Switzerland: M. Niehaus.
Bowlby, J. (1969). *Attachment and loss: Vol. I. Attachment.* New York: Basic.
Cannon, W. B. (1929). *Bodily changes in pain, hunger, fear, and rage* (2nd ed.). New York: D. Appleton. (Original work published 1915).
Cramer, P. (2006). *Protecting the self: Defense mechanisms in action.* New York: Guilford.
Darwin, C. (1859). *On the origin of species by means of natural selection.* London: John Murray.
Darwin, C. (1998). *The expression of the emotions in man and animals* (3rd ed.). New York: Oxford University Press. (Original work published 1872)
Dovidio, J. F., Glick, P., & Rudman, L. (2005). *On the nature of prejudice: Fifty years after Allport.* Malden, MA: Blackwell.
Durkheim, E., Simpson, G., & Spaulding, J. A. (1997). *Suicide: A study in sociology.* New York: Free Press. (Original work published 1897)
Ekman, P., & Davidson, R. J. (Eds.). (1994). *The nature of emotion: Fundamental questions.* New York: Oxford University Press.
Ekman, P., & Rosenberg, E. L. (Eds.). (2005). *What the face reveals: Basic and applied studies of facial expression using the Facial Action Coding System (FACS)* (2nd ed.). New York: Oxford University Press.
Erhlich, H. (2009). *Hate crimes and ethnoviolence: The history, current affairs, and future of discrimination in America.* Boulder, CO: Westview Press.
Evans, R. B., Sexton, V. S., & Cadwallader, T. C. (Eds.). (1992). *The American Psychological Association: A historical perspective.* Washington, DC: American Psychological Association.
Freud, A. (1936). *The writings of Anna Freud: Vol. 2. The ego and the mechanisms of defense.* New York: International Universities Press.
Freud, S. (1997). *Sexuality and the psychology of love.* New York: Touchstone. (Original work published 1963)
Freud, S., & Gay, P. (Ed.). (1989). *The Freud reader.* New York: W. W. Norton.
Frijda, N. H. (1986). *The emotions.* Cambridge, England: Cambridge University Press.
Friedman, M., & Rosenman, R. H. (1974). *Type A behavior and your heart.* New York: Knopf.
Galovsky, T. E., Malta, L. S., & Blanchard, E. B. (Eds.). (2006). *Road rage: Assessment and treatment of the angry, aggressive driver.* Washington, DC: American Psychological Association.
Geen, R. G. (2001). *Human aggression (mapping social psychology).* Berkshire, England: Open University Press.
Gross, J. J. (2006). *Handbook of emotion regulation.* New York: Guilford.
Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice.* New York: Cambridge University Press.
Izard, C. E. (1971). *The face of emotion.* East Norwalk, CT: Appleton-Century-Crofts.
James, W. (1890). *The principles of psychology* (2 Vols.). New York: Henry Holt.
Jung, C. G., & Hull, R.F.C. (1992). *Two essays on analytical psychology* (Vol. 7). New York: Routledge.
Lange, C. G., & James, W. (1962). *The emotions.* New York: Hafner. (Original work published 1922)
Lazarus, R. S. (1966). *Psychological stress and the coping process.* New York: McGraw-Hill.
Lazarus, R. S. (1991). *Emotion and adaptation.* New York: Oxford University Press.
Lazarus, R. S. (1999). *Stress and emotion: A new synthesis.* New York: Springer.
Lewis, M., Haviland-Jones, J. M., & Barrett, L. F. (Eds.). (2008). *Handbook of emotions* (3rd ed.). New York: Guilford.
Maslow, A. H. (1977). *The healthy p[illegible]lity.* New York: V[illegible] Reinhold.

Mayne, T. J., & Bonnano, G. A. (Eds.). (2001). *Emotions: Current issues and future directions.* New York: Guilford.
Miller, W. I. (1997). *The anatomy of disgust.* Cambridge, MA: Harvard University Press.
Monat, A., Lazarus, R. S., & Reevy, G. (Eds.). (2007). *The Praeger handbook on stress and coping.* Westport, CT: Praeger.
Murray, H. A. (1938). *Explorations in personality.* New York: Oxford University Press.
Nelson, R. J. (Ed.). (2005). *Biology of aggression.* New York: Oxford University Press.
Novaco, R. (1975). *Anger control: The development and evaluation of an experimental treatment.* Lexington, MA: D.C. Health.
O'Connell, A. N., & Russo, N. F. (Eds.). (1983). *Models of achievement: Reflections of eminent women in psychology.* New York: Columbia University Press.
Patterson, J. (2006). *Therapist's guide to psychopharmacology: Working with patients, families, and physicians to optimize care.* New York: Guilford.
Peterson, C., Maier, S. F., & Seligman, M.E.P. (1993). *Learned helplessness: A theory for the age of personal control.* New York: Oxford University Press.
Peterson, C., & Seligman, M.E.P. (2004). *Character strengths and virtues: A handbook and classification.* New York: Oxford University Press.
Preston, J. D., O'Neal, J. H., & Talaga, M. C. (2008). *Handbook of clinical psychopharmacology for therapists* (5th ed.). Oakland, CA: New Harbinger.
Reisberg, D., & Hertel, P. (2003). *Memory and emotion.* New York: Oxford University Press.
Roazen, P. (1974). *Freud and his followers.* New York: New York University Press.
Rogers, C. R. (1942). *Counseling and psychotherapy.* Boston: Houghton Mifflin.
Rogers, C. R. (1951). *Client-centered therapy, its current practice, implications, and theory.* Boston: Houghton Mifflin.
Shields, S. A. (2002). *Speaking from the heart: Gender and the social meaning of emotion.* Cambridge, England: Cambridge University Press.
Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis.* New York: Macmillan.
Skinner, B. F. (1976). *About behaviorism.* New York: Vintage.
Sternberg, R. J., & Sternberg, K. (2008). *The nature of hate.* New York: Cambridge University Press.
Stets, J. E., & Turner, J. H. (Eds.). (2007). *Handbook of the sociology of emotions.* New York: Springer.
Uchino, B. N. (2004). *Social support and physical health: Understanding the health consequences of relationships.* New Haven, CT: Yale University Press.
Walker, J. (2001). *Control and the psychology of health: Theory, measurement, and applications.* Buckingham, England: Open University Press.
Washton, A. M., & Zweben, J. E. (2008). *Treating alcohol and drug problems in psychotherapy practice: Doing what works.* New York: Guilford.
Watson, J. B. (1997). *Behaviorism.* Edison, NJ: Transaction. (Original work published 1925)
Wierzbicka, A. (1999). *Emotions across languages and cultures: Diversity and universals.* Cambridge, England: Cambridge University Press.
Wilson, E. O. (1975). *Sociobiology: The new synthesis.* Cambridge, MA: Harvard University Press.
Wolpe, J., & Lazarus, A. A. (1966). *Behavior therapy techniques: A guide to the treatment of neuroses.* New York: Pergamon Press.
Zuckerman, M. (2006). *Sensation seeking and risky behavior.* Washington, DC: American Psychological Association.

Biographies

Baenninger, A., & Baenninger, A. (2003). *Good chemistry: The life and legacy of Valium inventor Leo Sternbach.* New York: McGraw-Hill.

Bjork, D. W. (1993). *B. F. Skinner: A life.* New York: Basic Books.
Blum, D. (2002). *Love at Goon Park: Harry Harlow and the science of affection.* New York: Berkley Books.
Bowlby, J. (1990). *Charles Darwin: A new life.* New York: W. W. Norton.
Buckley, K. W. (1989). *Mechanical man: John Broadus Watson and the beginnings of behaviorism.* New York: Guilford.
Cannon, W. B. (1945). *The way of an investigator.* New York: W. W. Norton.
Clark, R. W. (1980). *Freud: The man and the cause—a biography.* New York: Random House.
Clarke, D. M. (2006). *Descartes: A biography.* New York: Cambridge University Press.
Darwin, F. (Ed.). (1958). *An autobiography of Charles Darwin and selected letters.* New York: Dover.
El-Hai, J. (2007). *The lobotomist: A maverick medical genius and his tragic quest to rid the world of mental illness.* Hoboken, NJ: John Wiley.
Ellis, A. (2010). *All Out!* Amherst, NY: Prometheus.
Freud, S., & Freud, E. D. (2007). *Living in the shadow of the Freud family.* Westport, CT: Praeger.
Freud, S., & Gay, P. (1988). *Freud: A life for our time.* New York: W. W. Norton.
Gillham, N. W. (2001). *A life of Sir Francis Galton: From African exploration to the birth of eugenics.* New York: Oxford University Press.
Gollaher, D. L. (1995). *Voice for the mad: The life of Dorothea Dix.* New York: Free Press.
Holmes, J. (1993). *John Bowlby and attachment theory.* London: Routledge.
Jones, E. (1953–1958). *The life and work of Sigmund Freud* (3 Vols.). New York: Basic Books.
Maslow, B. G. (1972). *Abraham H. Maslow: A memorial volume.* Monterey, CA: Brooks/Cole.
Maslow, A. H. (1979). *The journals of Abraham Maslow* (R. J. Lowry, Ed.). Lexington, MA: Lewis.
Quinn, S. (1987). *A mind of her own: The life of Karen Horney.* New York: Summit Books/Simon and Schuster.
Rubins, J. L. (1978). *Karen Horney: Gentle rebel of psychoanalysis.* New York: Dial.
Simon, L. (1998). *Genuine reality: A life of William James.* New York: Harcourt Brace.
Skinner, B. F. (1984). *The Shaping of a Behaviorist.* New York: New York University Press.
Weishaar, M. (1993). *Aaron T. Beck.* Thousand Oaks, CA: Sage.
Wilson, E. O. (1994). *Naturalist.* Washington, DC: Island.
Young-Bruehl, E. (1988). *Anna Freud.* New York: Summit Books.

Textbooks

Benjamin, L. T., Jr. (2007). *A brief history of modern psychology.* Malden, MA: Blackwell.
Bornstein, M. H., & Davidson, L. (2003). *Well-being: Positive development across the life course.* Mahwah, NJ: Lawrence Erlbaum Associates.
Buss, D. (2007). *Evolutionary psychology: The new science of the mind.* Needham Heights, MA: Allyn and Bacon.
Crosson-Tower, C. (2009). *Understanding child abuse and neglect.* Englewood Cliffs, NJ: Prentice Hall.
Funder, D. C. (2010). *The personality puzzle* (5th ed.). New York: W. W. Norton.
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