BEHAVIOR ANALYSIS AND BEHAVIOR MODIFICATION: An Introduction

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Printed and bound in the USA.

Credits
Cartoons by Michael Frazier
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Mechanicals by Sharon Myers
Index by René Rossman

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Examples

We drew many of our examples from everyday life, from events familiar to us all, events that may often puzzle us even though we've seen them many times. Most readers find such everyday examples to be rewarding because we're talking about them. Most readers also find such everyday examples help them understand the points being taught because they already understand the examples themselves. And most readers find such everyday examples to be useful because they can apply our analyses to other similar examples they meet in their normal lives.

But we've also drawn many of our examples from clinical cases and other areas involving professional behavior modifiers. Readers find these professional examples rewarding, because such examples often involve extreme cases of behavioral deviation, cases whose causes and solutions are not, at first, clear. And readers find such professional examples useful, because they help them understand the

role of the professional behavior modifier, either for future jobs for themselves or simply as part of their general education.

Terminology

We've sometimes used new terms, in all cases adopting common sense everyday language. We've used these new terms for three reasons:

1. The standard terms seemed a little awkward — for instance, we use "cue" rather than "discriminative stimulus."
2. The standard terms often confused students — for instance, we use "reward and aversive" rather than "positive and negative reinforcer."
3. The standard terms did not exist — for instance, we use "conditional reward" for rewards that are effective only conditional upon the presence of certain cues.

We think these new terms are more useful than the standard terminology used in behavior analysis. And, our field-testing demonstrates that they don't conflict with the standard terms. Neither students nor teachers had any difficulty in moving from one set of terms to the other.

Style

We've stressed three features of style in our book: readability, human interest and equality of sexes.

1. **Readability:** We've tried to use short words and sentences, words at an eleventh-grade reading level (unless otherwise explained).
2. **Human interest:** We've used first and second person pronouns, contractions and informal language.
3. **Equality:** We've used nondiscriminatory langauge, thus giving everyone equal status regardless of his or her sex. We've avoided the masculine, generic pronoun by using plural forms, or "he" and "she" interchangeably.

For more information on these issues, see:

Christensen, F. *Notes toward a new rhetoric.* New York: Harper & Row, 1967.

Dale, E., & O'Rourke, J. *The living word vocabularly: The words we know.* Elgin, IL: Dome, 1976.

Flesch, R. *The art of readable writing.* New York: Harper & Row, 1974.

Malott, R. W., & Whaley, D. L. *Psychology,* New York: Harper & Row, 1976 (613-615).

Sexism in Textbooks Committee of Women at Scott, Foresman, *Guidelines for improving the image of women in textbooks.* Glenview, IL: Scott, Foresman, 1974.

Tillema, M. *Structuring mature sentences.* Kalamazoo: Master's Thesis, Department of Psychology, Western Michigan University, 1977.

TECHNOLOGY

Empirically Developed

We tested the first draft of this manuscript and then revised accordingly, in somewhat the same manner as we do with programmed texts. We used an introductory psychology class and a graduate seminar in theoretical psychology. In both cases we gave them manuscripts especially prepared with questions in the margins of each page asking for comments on various features of what they were reading. We also gave multiple-choice tests to these students. Further, the entire manuscript was evaluated by professionals in the field of behavior analysis, and then revised on the basis of that feedback.

Study Objectives

We've placed study objectives at the back of nearly every section within each chapter. These objectives show the sorts of questions we

think the students should be able to answer after reading that section. The use of these study objectives greatly aids in teaching the course in a self-paced, personalized, or contingency-managed manner, as well as in the more traditional manner.

Definitions

We've set off the definitions so that your students can readily review them. We've also tried to keep them as straightforward as possible to help your students master them.

Terminology Review

In the final chapter, we have a major terminology review that gives instances and non-instances of the proper use of the concepts along with the rationale for various distinctions. We hope that serves to further strengthen your students' mastery of those basic concepts.

Cumulative Concept Building

Your students should achieve increasing levels of mastery of the basic concepts as they continue to encounter them throughout the text, so that by the time they've finished reading this book, they should have a much greater mastery of those concepts than they did when they first encountered them earlier in the book. This is possible because of the cumulative nature of the presentation, with subsequent concepts making use of earlier concepts, and subsequent analyses and applications making repeated use of many of the concepts that occurred before. So that in the final chapter we include exercises for the students to generate the original examples and analyses that they might not have been able to do just after they had first encountered those concepts.

to the student

We have several goals for this book:

1. We want to introduce the basic concepts and principles of behavior analysis so you will have a good basis for understanding the methods of behavior modification, since behavior analysis forms the basis of behavior modification.

2. At the same time, we wish to introduce you to radical behaviorism, since this seems to be essential to a true understanding of behavior modification. This introduction occurs whenever we look at psychological events from a strict behavioral view, avoiding nonbehavioral or mentalistic causes.

3. Also, we wish to present behavior analysis and behavior modification as a total approach to human behavior and to behavior change (to psychology). Not just a bag of tricks that happens to work for common sense reasons. Not just one set of options we use from time to time along with many other approaches.

4. We wish to give you a good enough background in behavior analysis that you can analyze instances of behavior, recommend general procedures, design new procedures, interpret other new procedures in terms of behavioral concepts and look at the world, in general, in terms of behavior analysis.

5. We hope this book will help you to better understand and critique the more advanced and more specialized books in the field — books that often fail to stress the basic behavioral principles on which their techniques are based.

The goal of our book, however, is not to train you to be a behavior modifier. By now, there are many books about behavior mod dealing with specialized techniques, advanced research and applications to special problems. Instead, we want to help you acquire a solid background in behavior analysis and general behavior mod.

BEHAVIOR ANALYSIS AND BEHAVIOR MODIFICATION:

An Introduction

section 1
behavior analysis

Just as the practice of medicine rests on the sciences of biology and chemistry, the practice of behavior modification rests on the science of behavior analysis. And so, we've divided this book into two sections, the science of behavior analysis, followed by the practice of behavior modification. Behavior analysis involved the basic principles of behavior to understand people. Behavior modification involves the use of those principles to help people.

The first section, behavior analysis, introduces the basic principles of behavior so you will be better able to study behavior modification in the second section, so you will be better able to understand the practice in terms of the science.

Just as our love of art rests on its elegance, its perfect composition — all parts fitting into place — so our appreciation of science rests on its elegance, its perfect structure — all facts explained. And behavior analysis is now growing into that sort of mature science, as it tries to explain more and more of our psychological world. So we get much the same thrill when we study a great work of art as an elegant composition.

With only a few basic concepts and principles, an elegant science can explain its many facets; and with only a few basic concepts and principles, behavior analysis can also explain its many facets. The same basic concepts and principles explain: ▪ why people act strangely, ▪ why people act basely, ▪ why people act magnificently, ▪ why we all act as we do in our everyday lives.

Just as we stopped throwing vengeful stones when people didn't act as they should, now we can stop pointing accusing fingers when people don't act as they should, whether those people are ourselves or others. For now we know many of the causes of behavior and so, can be tolerant of the person while dealing with the causes of the problem. As Steven Vincent Binet has suggested, we can "hate the sin, but love the sinner."

So we value the science of behavior analysis because it supports the practice of behavior modification, because it explains our psychological universe with elegant simplicity, and because it helps us live with ourselves and with others. Behavior analysis thrills and excites us, we hope it will thrill and excite you too.

chapter 1
rewards and aversive stimuli

INTRODUCTION

What makes people tick? Why do we think what we think? Feel what we feel? Say what we say? Do what we do? Why are we all so alike and yet so different? Why are we clever or dull? Abnormal or normal? Winners or losers? Why do we work hard for little green and white pieces of paper with pictures of dead presidents on them? Why do we become tassel dancers in New Orleans? Give advice no one asked for? Get hung up on hobbies? Play pinball machines? Rip off Bell Telephone? Teach students? Write books? Tell jokes? Why did you put off starting this book until the night before the exam?

We'll look at some specific answers to these questions and also at a general way of understanding human beings — a way that will help you answer almost any question you might ask about human behavior.

THE LAW OF EFFECT

We propose one basic answer to almost all questions about human behavior: we do what we do because of the effects of our actions. We repeat our actions if they've had one kind of effect but not if they've had another kind of effect. We ask a person for a second date if the effect of our last request was a good time, but we don't if the effect was that the person called us a pest and left our ear drum buzzing to the sound of the receiver slamming down. We buy the latest Frank Zappa record if we enjoyed the last one we bought, but not if we tried to buy something to dance to. We go to the Ming Mung Restaurant if we liked their eggdrop soup, but not if we got MSG poisoning. We may cut a class if the only effect is that we get to sleep an extra hour, but we'll be less likely to do so again if that cut lowered our course grade. We may go for another bottle of Boones Farm if the last one we drank tasted like hip strawberry pop, but not if we had a Boones Farm hangover.

We are the way we are, we do what we do because of the effects of our being the way we are, of our doing the things we do. And that simple notion supports our entire analysis of behavior. We call it the Law of Effect.

The Law of Effect: the effects of our actions determine whether we will repeat them.

All of our actions are due to this Law of Effect. For instance, I often tromp through the woods at dawn. But why — what effects do my early morning outings produce? I see a rising sun and feel a slight breeze, cooling my skin with the morning air. I hear a woods full of birds. Perhaps these effects help lure me out of bed and into the

woods at such an early hour. Perhaps the Law of Effect works even at that time of day!

The Law of Effect governs all of our lives, so we'll use the next eight chapters to look at many cases of how that law might influence our actions, while also looking at other concepts built on this basic law.

- 1 State the Law of Effect, cite an instance, and indicate the role of that law in the analysis of behavior.

How to Use the Study Objectives

You'll find numbered study objectives at the end of the sections in each chapter. Most likely, your teacher will base some part of your quizzes and examinations on these study objectives, so you should be able to answer all of the objectives. However, you should also be prepared to answer questions that might not be listed in the objectives.

Our students have found that the best way to use the objectives is as follows:

1. Read the text before you look at the objectives.
2. Then try to answer the objectives.
3. Then review the text for the answers to any objectives you can't answer.
4. You may use examples from this text when objectives call for examples, unless your teacher suggests otherwise.
5. You may look at the objectives after you've read each section or after you've read an entire chapter.
6. You will probably learn the most if you read each chapter twice, first quickly, ignoring the objectives, and then with more care, being sure you can answer each objective.
7. Many students seem to do better if they write out their answers to the objectives.
8. Review the objectives and your answers before each quiz and exam.

9. Do **not** look at the objectives and then try to dig out the answers without reading the complete chapter.

REWARDS AND AVERSIVE STIMULI

You tend to repeat actions having one effect, those that produce rewarding results — good times, good sounds, good tastes, good grades. And you tend to stop doing things that produce aversive results — bad times, bad sounds, bad hangovers and bad grades. The Law of Effect, then, is based on two types of behavioral stimuli — rewarding and aversive.

Rewarding stimulus: a stimulus we tend to maximize contact with.

Aversive stimulus: a stimulus we tend to minimize contact with.

A note about the words "aversive" and "stimulus": First, notice that we're saying "aversive" not "adversive" — no "d". "Adversive" (based on adverse) often implies something working against us, while our word, "aversive," simply implies something we don't like. And we aren't using the word "stimulus" to imply a prod or goad, but simply to indicate a condition or state of affairs in our world. We're using "stimulus" as a very general word to mean any event or thing or change in our physical world. A ball game, a light, a drop in temperature — all these are stimuli.

For instance, you swipe one of those three-cent mints next to the cash register at Elias Brother's Big Boy Restaurant. Very rewarding, until you notice the expression on the face of a four-year-old boy who catches you in the base act — an aversive stimulus that keeps you on the straight and narrow for the rest of your life. Moral: Some of life's rewards would drag us to the depths of dishonor if we didn't have to set good examples.

Or, thinking that your parents are sound asleep, you and your date sit in the living room, where you both begin to slowly disrobe. But all at once, your date scurries out the front door and you fly

into the downstairs bathroom with a single bound — all accompanied by the sound of heavy footsteps coming down the stairs. That aversive stimulus keeps you on the straight and narrow for over a week. Moral: Some rewards are even stronger than a three-cent piece of candy.

- 2 Define rewarding and aversive stimulus and and cite two examples of each.

EVOLUTION AND THE LAW OF EFFECT

Gore was a prehistoric creature. Sometimes it did things that produced food or shelter; then it would repeat those acts. But sometimes it did things that produced pain, and it would not repeat those acts. The effects of Gore's actions determined whether it would repeat them — the Law of Effect.

And the effects of our actions also determine whether we'll repeat them, so the Law of Effect works for us, too. But why does it work? It works because of our biological structure. Because our structures cause us to react to events in the world in a certain way — cause us to be more likely or less likely to repeat the actions that produce certain events.

Sometimes Gore did things that produced food or shelter, and it repeated those acts. But sometimes it did things that produced pain, and it stopped doing those things. And we act in the same basic ways as Gore, because of our biological structures. But why are our bodies built so that their biological structure causes us to act in accord with the Law of Effect? Because we inherited our structures from our ancestors — our structures evolved over the generations, evolving as they did because of the process of natural selection, because our ancestors tended to survive if they acted in accord with the Law of Effect. So in short, we act in accord with the Law of Effect because our ancestors survived when they repeated acts that produced good effects and didn't repeat acts that produced harmful effects.

Gore thrived and survived. Gore produced many offspring. But

not Dodo. Because Dodo did not repeat acts that had produced food and shelter. Because Dodo did not stop doing things that produced pain. Dodo died of starvation. Dodo's sister died of exposure. Dodo's brother died of cuts and bruises. So it goes. Why were species more likely to survive if they acted in accord with the Law of Effect? Simply because responding in accord with the Law of Effect increased their contact with stimuli that helped them survive and decreased their contact with stimuli that hurt their survival.

Sometimes Gore's acts had effects that helped its survival; it repeated those acts. But sometimes its acts had effects that hurt its survival; it did not repeat those acts. Our ancestors evolved so that they repeated acts having effects that helped their survival, and they stopped repeating acts that had effects that hurt their survival. In other words, they maximized contact with stimuli that helped survival, and they minimized contact with stimuli that hurt survival. Stimuli that helped them survive functioned as rewards, and stimuli that hindered their survival functioned as aversives. So they lived to reproduce. They lived to pass on their biological structures to the next generation. And because of their inherited structures, that next generation also acted in accord with the Law of Effect. So they too lived to reproduce. And on and on. Until here we are, with our inherited structures still maximizing contact with rewards and minimizing contact with aversives.

Once most of our rewards were stimuli that helped us survive and most of our aversives were stimuli that hurt our survival. Sometimes our ancestors ate things that had a sweet taste; then they would eat those things again, because our species had evolved so that sweet tastes were a strong reward. This evolution had occurred because sweet-tasting foods often contained much survival-producing nourishment in our ancestors' world.

But our world has changed.

Meet Goretta Gourmet — mid-century, mid-America. Sometimes she eats things that have a sweet taste — ice cream, candy, cake. Sometimes? No, all the time for fat little Goretta. Fat little Goretta with her mouth full of cavities. Tired little Goretta with her overactive pancreas. Poor little Goretta — caught in the bind of evolution.

Her species didn't evolve as quickly as her culture — her processed-sugar culture. So now Goretta's rewards sometimes hurt her survival.

So now rewards don't always help our survival, and aversives don't always hinder our survival. So now rewards are simply stimuli we maximize **contact** with, and aversives are simply stimuli we **minimize contact** with, whether or not that helps us survive. So now we must beware. So now we can no longer say, "if it feels good, do it!"

- 3 Why do some stimuli function as rewards while others function as aversives?
- 4 Cite an instance and explain why some rewards or aversives may cause us to act in ways that will hurt our survival in our human-made world.

UNLEARNED AND LEARNED REWARDS AND AVERSIVES

As we've seen, some rewards and aversives control our actions because of the way our species evolved; we call these unlearned rewards or aversives. We inherit a biological structure that causes some stimuli to be rewarding or aversive. This structure evolved because rewards helped our ancestors survive, while aversives hurt their survival. Some of these unlearned rewards, such as food and fluid, help us survive by strengthening our body cells. Others help our species survive by causing us to produce and care for our offspring — these stimuli include the rewarding stimulation resulting from copulation and nursing. And many unlearned aversives harm our survival by damaging our body cells; such aversives include burns, cuts and bruises.

But other rewards and aversives control our actions because of things that happen during our own lives; we call these learned rewards or aversives. Learned rewards and aversives don't depend on an inherited biological structure. They acquire the functions of rewards and aversives because of their pairing with other rewards and aversives. For instance, the sight of someone you love comes to be rewarding because that sight has been paired with the rewarding times you've had with that person — Not because you inherited a tendency to find

the sight of that one person rewarding. And the sight of someone you hate comes to be aversive because that sight has been paired with the aversive times you've had with that person — again, not because of an inherited tendency.

We call those inherited stimuli unlearned rewards and aversives since they work prior to any learning or pairing with other rewards and aversives. And we call those noninherited stimuli learned rewards and aversives since they work only after learning through pairing with other rewards and aversives.

Unlearned rewards or aversives: rewarding or aversive stimuli that have their effect because of the inherited biological structure of the creature.

Learned rewards or aversives: rewarding or aversive stimuli that have their effect because of their pairing with other rewarding or aversive stimuli.

Money is a very strong learned reward because of its pairing with so many other rewards, like food and fluid. A clear sky may be a learned reward on the day you go on a picnic, since it has been paired with other rewards at such times. The sight of a lighted restaurant is a learned reward when you're driving along the highway, hungry and thirsty, because such a sight has been paired with rewarding food and drink in the past. But the sight of an out-of-order sign on the bathroom door of that same restaurant can be a learned aversive after you drink a couple cups of coffee, since that sight has been paired with aversives in the past.

- ▪ 5 Define unlearned and learned rewards and aversives and cite one instance each of an unlearned and learned reward and one instance each of an unlearned and learned aversive.

THE LEARNED REWARD OF CONTROL

One feature of our world is always paired with other rewards. That

feature is control of the world. Almost all our rewards come to us as a result of the control we exert over our world. We control the water fountain when we get a drink of water. We control our knife and fork when we get a bite of steak. We control our felt tip pen when we write home for more money.

Yet we take control for granted, since it seems like second nature to us. But people who suffer from cerebral palsy know otherwise, since they may have a great deal of trouble controlling their own actions. We shouldn't take such control for granted — control plays a crucial role in getting our rewards. Looking at control as a learned reward explains much behavior that otherwise puzzles us.

For instance, why would a person put good money in a slot in a box when the only result is that the person can then flip steel balls around inside that box causing bells to ring, lights to flash, and points to rack up on the scoreboard? In the past the pinball wizard's bizarre actions produced the reward of control over that electro-mechanical circuit.

Speaking of control over electro-mechanical devices, have you ever heard of telephone pirates? These are people, often kids, who find ways to make long-distance calls without ever paying Ma Bell. The ultimate pirate calls himself Captain Crunch. He spent hundreds of hours building equipment that allows him to cheat Bell Telephone of a few dollars. For his grand triumph the Captain took two separate phones and placed two long distance calls to himself — one from the left phone to the right phone and the other from the right to the left. At the same time! But that's not all. Both phone calls were routed around the world, along opposite paths. One call went from east to west, from San Francisco to Tokyo, to India, to Greece, to South Africa, to South America, to London, to New York and home again — to San Francisco. And the other call went in the opposite direction — from west to east, around the world and back again. Then he could put one receiver to each ear and talk to himself in round-the-world stereo! All for free (except, of course, for the hundreds of hours and dollars he had put into his equipment). But what control!

[Clarification: One student reader asked, "Are the pirates working to avoid the small aversive of having to pay for their phone calls?"

I don't think so. I think many of them spend much more time and money in trying to cheat Bell Telephone than they save. Besides, most of the long-distance phone calls they make are to other pirates. And what do they talk about? How to cheat Bell so they can make "free" calls to other pirates, to talk about how they can cheat Ma Bell so they can make "free" calls to other pirates . . . in other words, I think the learned reward of control (not the high cost of phone calls) maintains their strange actions.]

We suspect control also rewards taking part in hobbies like ham radio, model building, electric trains, slot cars, sports, music, yoga. Why do people become addicts of programming computers, fixing cars, gardening, cooking, sewing, teaching, administering? Because they're useful things to do? No doubt. But don't forget control. I've seen many people get hooked on computers when the major reward seems to be the challenge of getting that high-priced piece of hardware to work the way it should, to get those lights flashing as they should, to get that printer spewing out numbers as it should. These programmers solve real problems with their computers, but the problem often seems like a mere excuse for their mastering their environment — man over machine. Control.

Why have the richest men in the country run for president? So their families can get even richer? Perhaps. But think of the power. Think of the control! Why do we give unasked-for advice? "You should listen to this record, see that movie, read this book, drive this car, eat at that restaurant, visit this country . . ." Because we find it rewarding to help others? Of course. But don't overlook control.

Control seems to spread throughout our entire life; it combines with other rewards to make some actions more likely while working alone to make others more likely.

LEARNED SOCIAL REWARDS AND AVERSIVES

"Waiter . . . Ah, waiter . . . Sir, I'd like a . . . Garcon, would you mind . . . Hey, Mack, gimme a burger with the works, an order of

fries, a big orange drink and a piece of that pecan pie!"

   ★ ★ ★

Do you ever think of the world as a giant restaurant full of waiters who are hard of hearing and who don't see too well? And you're striving in vain for their attention to get your needed rewards? We depend on the attention and the good will of others to get almost all our rewards, learned and unlearned. Such is the life of the social animal.

   ★ ★ ★

"Would you pass the . . . ?"
"How do you get to . . . ?"
"Where's my . . . ?"
"It really feels good when you . . ."
"I'd like two dozen . . ."
"Gee, thanks, I really appreciate your giving me a raise, a promotion, a job, a hand, someone to lean on, a kiss, an easy time, a hint, your old Buick, a change of diapers, my bottle to nurse on, a companion to play with."

   ★ ★ ★

Attention and approval are strong rewards, because of their frequent pairings with so many other rewards. In fact, people give us few rewards without also giving us their approval or at least their attention.

On the other hand, people also give us their attention and approval when we do things for them — when we give them things or a helping hand. And that attention and approval in turn increases the likelihood of our doing things for people in the future. Social approval and attention play a crucial, or important, role in supporting most actions that relate to other people.

You'll be better able to understand many of the mysteries of human actions if you always look for the social rewards following those actions. For instance, a teacher's attention increases the likelihood of students' handraising. And the students' attention increases the likeli-

hood of the teacher saying, "Who can answer my question?" But most often the teacher's attention also increases the amount of the students' misbehavior in grade-school classrooms, since that attention frequently follows such misbehavior. In fact, psychologists have collected a large amount of data showing that such misbehavior results from the attention it produces. Teachers increase the students' bad behavior while trying to get rid of it.

Social rewards may also play another role in the classroom. I suspect that along with salary, and even control, social rewards play a major role in supporting the very act of teaching. How many teachers would keep their jobs if they had to sit in separate rooms, isolated from their students, simply pushing buttons, throwing levers and grading papers? I suspect not very many for very long, in spite of the fact that many harrassed teachers might scream for the chance to get such a job. I don't think they'd last as long as they believe without the rewarding attention, approval, and thank-yous they get from their pupils.

And just as approval acts as a strong learned reward, disapproval acts as a strong learned aversive — due to its pairings with other aversives and the loss of rewards. That dirty look, that angry glance, or that turned up nose someone else provides will often quickly decrease the likelihood of whatever act of ours produced it. We'll go to a great deal of trouble to avoid the disapproval of our friends — and sometimes even our parents, brothers, sisters and teachers. We'll wear our hair a certain way, listen to a certain type of music, and study harder than we'd like — all because these kinds of actions have avoided the disapproval of others.

Once upon a time, an exotic dancer danced on Bourbon Street in New Orleans. The Tassel Lady. She had a tassel attached to each breast, to each cheek, and to her navel. She could twirl each pair of tassels in the same directions, in opposite directions, and all five at once. As the Tassel Lady said, "It may not be sexy, but you can't ignore it." And there we all go, twirling our way through life, hoping an arrogant waiter will notice us.

Social rewards and aversives: learned rewarding and aversive stimuli

involving the behavior of other people. Those stimuli acquired their power because they were paired with people controlling other rewards or aversive stimuli.

- 6 Define social rewards and aversives and cite two instances each of behavior being affected by social rewards and social aversives.
- 7 Why are social rewards so strong?

CONDITIONAL REWARDS AND AVERSIVES

We've been looking at cases where a particular stimulus is always rewarding or always aversive, but the same stimulus can sometimes act as a reward while at other times it acts as an aversive. This happens when those stimuli are paired with rewards in one situation and with aversives in another situation. Then, the nature of the rewarding or aversive stimuli becomes dependent, or conditional, upon the current situation. For instance, you tell a joke and your friends laugh. You'll most likely repeat that act because their laughter is a learned, social reward. "They like my joke; they like me." Approval!

Laughter's a reward?

Yes.

What about the time I fell down on the ice and banged my elbow and everybody laughed? What about the time I made a dumb remark in class and all my so-called friends laughed? Scars from the laughter of others cover my soul. And I don't find myself rushing off to do my own ice capades or to be the class dunce. Surely that laughter can't be a reward . . . at least not for me.

You've got us there. Sometimes laughter doesn't reward the acts that produce it because such laughter has not been paired with social approval in those settings. We approve of witty and clever people, not clumsy and stupid ones. Laughter resulting from an error will be a social aversive rather than a social reward, because of its pairing with disapproval instead of approval.

Okay, we got that one straightened out — sometimes laughter is a reward and sometimes an aversive. But what about approval? Can you think of a time when that is not a reward?

Yes. If my folks say they like the way I'm wearing my hair, I rush to the mirror to see what's wrong. Their approval was aversive in that case.

Sounds like it. Perhaps your parents' approval of how you look has been paired with your friends' disapproval of your looks. And, you rebel you, the approval of your friends outweighs the approval of your parents. So perhaps we should add the notion of "conditional" rewards to our list of basic concepts.

Now, we've seen how laughter can be rewarding or aversive depending on the conditions — depending on the act causing the laughter. And we've seen how approval can be either rewarding or aversive depending on the conditions — the setting of the act that is being approved and who's approving of it. Even your parent's approval is rewarding sometimes.

But what about circumstances that affect the strength of an outcome rather than whether it's a reward or an aversive? In other words, why are some rewards and aversives more powerful than others? I find it rewarding when anyone tells me they like my writing, but I find it most rewarding when my colleagues tell me they like what I've written about behavioral analysis. The more expert the source of approval, the more powerful the reward of that approval; the approval of experts has had more pairings with other rewards than has the approval of amateurs. The same process explains why approval from a very critical person with high standards seems more rewarding than approval from someone who loves everything.

Conditional rewards and aversives: a learned stimulus that is rewarding or not, a strong or a weak reward, depending on the conditions — one that is rewarding in one setting and aversive in another, or weak in one setting and strong in another.

- 8 Why are some rewards conditional?
- 9 Define conditional rewards and aversives and cite one case where the reward goes from weak to strong and one case where it goes from a reward to an aversive.

NATURAL RESPONSE CLASS

Critics argue that behavior analysis can't account for complex human actions, saying that people would be locked into a very small set of responses if they made only those precise responses that produced rewards in the past. And we would agree with the critics, except for their big "if" — "If people made only those precise responses that produced rewards in the past." But rewards have a much broader impact than that. Rewards and aversives not only affect responses that look or sound like the ones that produced them; they also affect responses that differ slightly from the first responses.

We use the expression "natural response class" to refer to a set of physically similar responses that are all affected by the same reward or aversive. And in fact, whenever we use the word response, we'll normally mean response class, unless we indicate otherwise.

Suppose the teacher attends to Sally when she raises her hand to ask a question. That attention will act as a reward, but for what? Will it increase the likelihood of only those handraising acts that look exactly the same as the response Sally happened to use when the teacher called on her? Will it increase the likelihood of raising her right hand at just the same angle and at just the same speed as on that rewarding occasion?

Of course not. The reward increases the likelihood of all acts of handraising that are somewhat like the one producing it. The reward even makes the act of raising her left hand more likely, as well as raising her right. All these forms of handraising make up this unlearned response class.

Natural response class: A group of responses that together become more likely or less likely because they are physically similar.

When a response produces a reward, that response becomes more likely, but so do all the other responses that are physically similar to it. The members of the response class also all become less likely when one member produces an aversive.

[Clarification: One student reader raised a good question about

Sally and her teacher. She asked, "What does the teacher's attention have to do with how Sally raised her hand? Didn't the teacher just give the reward for Sally's raising her hand to ask a question, not for the precise way Sally raised her hand?" Most likely, the teacher didn't think of his attending to Sally as a reward for anything. But the teacher certainly would have paid attention to Sally following almost any form of handraising. Still in that one case, the reward did follow only one specific response; and the reward affects the types of responses that will become more likely, not what the teacher thought or what the teacher would have done.]

Sometimes students are puzzled as to why learned responses belong to natural response classes. But they should remember that a natural response class has nothing to do with whether a response is learned or unlearned. Instead, the term natural response class refers to the fact that all physically similar responses become more likely when one response produces a reward. And all physically similar responses become less likely when one response produces an aversive. A reward or aversive never affects just the specific response that produced it, but instead affects all physically similar responses. We call such response classes "natural" because physically similar responses react together automatically. For instance, nobody has to teach you that you can push a door open with your left hand once you've learned to push it open with your right hand. Both responses automatically become more likely when the first one produces a reward, in the sense that you aren't born with the ability to open doors.

Let's look at one more case of a natural response class. When you were learning to speak, your parents didn't wait until you uttered a perfectly pronounced request for milk before they gave you a glass of milk. "Ma," "Mu," "Mi," "Mik," or anything at all like milk got the requested reward. And that reward made many verbal responses more likely to occur, all of those somewhat the same as the one that got the milk.

■10 Define a natural response class and cite two instances.

ARBITRARY RESPONSE CLASS

There are also arbitrary response classes, classes of responses that may not be physically similar, but are related in that they have produced the same sort of reward or aversive. If you get a laugh when you tell a joke to a group of friends, you'll probably tell a few more jokes. The rewarding laughs make an entire class of joke-telling responses more likely. This occurs though the physical similarity (the sounds of the words) between the act of telling a new joke, versus the act of telling the old, may be only slight — no greater than the physical similarity between telling the old joke and telling the saddest story in the world. The jokes are tied together by the sameness of their results, not their physical sameness. If telling one joke got a laugh in the past, then telling another joke may also get a laugh. In that way an arbitrary response class develops. A reward produced by one member of this learned response class will make the other members more likely as well.

Arbitrary response class: a group of responses that become more or less likely to occur together because they produced similar rewards in the past.

The entire response class becomes more likely or less likely depending on whether a member of that class has produced a reward or an aversive. Let's now look at one more case of a learned response class. Every Saturday is clean-up time around your apartment, but your roommates always find some excuse for not helping. First it's too much homework, then they have to go shopping, then they have headaches, etc. By allowing your roommates to avoid their share of the work, you're setting up an arbitrary response class, consisting of a set of copouts with no physical sameness. But those responses all produce the same effect — they allow your roommates to avoid working. So all of these excuses belong to the arbitrary response class of avoiding work.

■11 Define an arbitrary response class and cite two instances.

■ 12 Describe what might happen if a person did not have an arbitrary
      response class when she should have.

HOW REWARDS AND AVERSIVES AFFECT OUR ACTIONS

We've seen that rewarding and aversive stimuli affect our actions.
And we defined those stimuli in terms of their effects on our actions,
though we didn't do this in a direct way. We said we maximize con-
tact with rewards, and we minimize contact with aversives. For in-
stance, we tend to do things that cause people to approve of us, while
we tend to stop doing things that cause people to disapprove of us.
But now let's look at those stimuli again, so as to stress the way they
affect our actions.

True, we do tend to maximize contact with rewards. But that
doesn't mean we act with the "intention" or "purpose" of maximiz-
ing those rewards. Instead we merely tend to repeat acts that have
produced rewards in the past. And since our world is fairly stable,
acts that produced rewards in the past will tend to produce those
same rewards in the future. So repeating those acts has the effect of
maximizing our contact with those rewards, even though we did not
repeat those acts with the intention of maximizing that contact.

For instance, a person complains about how unpopular he is (act),
with the result that others assure him of how much everyone loves
him (reward). Such approval may make it more likely that the person
will have the same sort of complaints in the future. That rewarding
reassurance may increase the rate of complaints, rather than reduce
them, as most people might expect. But often the complainer would
be shocked at the notion that he complained in order to maximize
contact with that rewarding approval.

And we tend to minimize contact with aversives. But again, that
happens as a result of our tendency to stop repeating acts that have
produced aversives, rather than as a result of our **intention** to reduce
that contact with aversives.

For instance, you ask your boss how you did on your job (act)
with the result that your boss tells you you did an outstandingly

mediocre job (aversive). That critique makes it less likely that you will ask your boss's opinion in the future. But that doesn't mean that you are avoiding your boss in order to minimize contact with that aversive.

Let's try to clear up just one more point about the way rewards and aversives affect our actions. For instance, we don't ask a friend for a date today (act) because they'll grant us our request (reward); they might not. We ask for the date because that act got rewards in the past. Again, past rewards and aversives affect our current actions. Those rewards and aversives that may follow our acts don't increase or decrease the likelihood of those acts taking place at that moment. Rather, past rewards and aversives affect our current actions, while present rewards and aversives will increase or decrease the likelihood of future actions.

- 13 How do rewards and aversives cause us to act?
- 14 What rewards and aversives affect our present actions?

CONCLUSIONS

We said the Law of Effect is one of the most powerful principles in all of psychology; it helps us understand why we are the way we are, why we do what we do. The effects of our past actions determine our future actions. And we've suggested that those effects are based on two types of stimuli — rewards and aversives. Almost everything we do is because similar actions have increased our contact with rewards or decreased our contact with aversives.

We've seen that unlearned rewards and aversives form the bases for learned rewards and aversives. But learned rewards and aversives seem to have the most frequent and direct impact on our moment-to-moment actions.

We explained that control of our environment pervades our life as a learned reward because of its pairing with almost all other forms of rewards. And in our social world, where we depend so much on others for our rewards, the learned social rewards of approval and at-

tention seem to be a major factor affecting much, if not most, of what we do.

We looked at two concepts that will help us understand actions that might otherwise puzzle us. The notion of "conditional rewards and aversives" shows how the same stimulus can be a reward or an aversive, depending on the conditions. And the notions of "natural and arbitrary response classes" shows how a reward or aversive can affect more responses than the specific one that was first involved with that stimulus. These, then, are our basic concepts, the concepts we'll use in trying to understand all of human behavior — a momentous task which behavior analysis has far from completed. But we hope by the time you've finished this book, you'll agree with us that behavior analysis has made a good start.

ENRICHMENT

"Aversive" as a Noun and an Adjective

We debated long and hard about our informal use of the term "aversive" as a noun, just as we debated long and hard about almost all of the terminology we're using in this text. The problem was that we wanted a nice concise word for "aversive stimulus" and "aversive event"; we already had the concise word "reward" for "rewarding stimulus" and "rewarding event." But "aversive" is normally used as an adjective to **modify** nouns, like stimulus and event, rather than as a noun standing by itself. So we would normally say, "His frown was an aversive stimulus." However, for the sake of simplicity we've decided to simply say, "His frown was an aversive," changing "aversive" from an adjective to a noun and dropping the original noun — "stimulus."

This usage gives us a general term, like our use of "reward," that we can use when we're talking about the general concept of "aversiveness," rather than about a specific instance. The problem with always using "aversive **stimulus**" is that for many people "stimulus" may not seem to include **events** like arguments, **things** like spinach

and **conditions** like 115° in the shade, and there's no shade. Now it's clearly too wordy to say an "aversive stimulus, event, thing, and condition."

So we've selected the simple, "aversive," as being the most concise term and as having the best intuitive appeal for most of our readers. And though we selected "aversive" with some qualms, we've found it a convenient term, playing a larger and larger role in our informal verbal repertoire, vocal as well as written. However, we still use the term "aversive stimulus" when we're in more formal writing and speaking situations.

chapter 2
basic behavioral procedures — procedures reinforcement, punishment and punishment and avoidance

INTRODUCTION

In the last chapter we defined rewarding and aversive stimuli, saying we tend to maximize contact with rewards and minimize contact with aversives. In this chapter we'll look at the basic ways rewards and aversives relate to our behavior. And we'll see how these relationships affect the way we behave, some by making our actions more likely and others by making our actions less likely.

BEHAVIORAL CONTINGENCY RELATIONSHIPS

Rewards and aversives relate to our actions in three basic ways: they can be presented, removed, and prevented. These relationships affect the way we act. We call them **behavioral contingency relationships.**

Behavioral contingency relationship: a causal relation between a response and a reward or aversive.

Let's do a brief overview of these basic contingency relationships: the presenting, removal, and preventing relationships. Then in later sections, we'll go into them in more detail. First, let's look at the presenting relationships, ones where our actions produce a reward or aversive. The presenting relationship causes us to repeat an act if that act produced a reward. For instance, every time I say what a bummer it is to live in our sick society (act), you agree with me (reward). My statement (act) produces (contingency relationship) your agreement (reward). Is that relationship the thing that's causing me to talk about being bummed out? Yes, because the reward increases the likelihood of the act that produced it – your agreement increases my bummed-out statements.

But that same presenting relationship causes us to stop acting when the act has produced an aversive rather than a reward. For instance, every time I say we should try to help our society get it together (act), you tell me I sound like a naive freshman. My positive talk (act) produces (contingency relationship) your disapproval (aversive). Is that relationship what's causing me to lose hope? Yes, because the aversive decreases the likelihood of the act that produces it – your disapproval decreases my positive talk.

Second, let's look at the removal relationships, ones where our actions remove a reward or aversive. The removal relationship causes us to stop acting if that act has removed a reward. For instance, every time I talk about getting into my school work again (act), you drift out of the room and stop (contingency relationship) listening to me (reward). My industrious talk (act) causes me to lose (contingency relationship) your attention (reward). Is that relationship what's causing

me to get lazier? Yes, because the removal of a reward decreases the likelihood of the act that causes it — losing your attention decreases my talk about school.

But that same removal relationship causes us to repeat an act when that act has removed an aversive. For instance, every time I do a little dope (act), you stop (contingency relationship) putting me down for being such an uptight pawn of the system (aversive). My doing dope (act) gets rid of (contingency relationship) your disapproval (aversive). Is that the thing that's causing me to become a heavy user? Yes, because the removal of an aversive increases the likelihood of the act that causes it — getting rid of your put-downs increases my using marijuana. Not that dope isn't a strong reward in itself; I know that. But, I also think your social approval hooks me and your disapproval wipes me out. And you say you like the way I'm getting more easygoing these days. More mellow. Thanks.

But you wish I'd stop asking all those questions about contingency relationships, because they put you uptight, because they make you think I'm still too much a part of the system. You think I should lay off a little. Hmmm. I wonder what contingency relationships are involved there? My asking behavioral questions (act) produces (contingency relationship) comments about how they make you suffer (aversive). Will your reaction cause me to stop asking questions about behavior? Of course it will.

Finally, let's look at the preventing relationships, ones where our actions prevent the removal of a reward or the presentation of an aversive. For instance, I'm avoiding the loss of your attention every time I say our society really is sick, because when I don't talk that way you stop paying attention to me. Saying the society is sick (act) prevents the removal (contingency relationship) of your attention (reward). Is that why I'm sounding more and more like a prophet of doom? Yes, because acts that prevent the loss of a reward increase in likelihood — my cynicism prevents the loss of your rewarding attention.

And a preventing relationship causes us to repeat acts that avoid the occurrence of an aversive. For instance, I'm avoiding the presentation of your disapproval when I say behavior analysis isn't all that

useful if when I say it is, you jump down my throat by saying how I lack the power of reason. Saying behavior analysis isn't useful (act) prevents the presentation (contingency relationship) of your disapproval (aversive). Is that why I don't talk well of behavior analysis much these days? Yes, because acts that prevent the occurrence of aversives increase in likelihood − my agreeing with you prevents the presentation of your aversive disapproval.

<p style="text-align:center">*   *   *</p>

The Law of Effect states that the effects of our actions determine whether we will repeat those actions. The effect of our current actions determines what we'll be more or less likely to do in the future. Our actions produce an effect, and that effect, in turn, influences actions that follow.

<p style="text-align:center">act ⟶ effect ⟶ act ⟶ effect ⟶ act</p>

But just what are the effects of our actions? The effects are combinations of the behavioral contingency relationships and the rewards and aversives following our actions. In other words, an effect is the causal relation between an act and the reward or aversive that follows. For example, the effects of our actions can be the presentation (contingency relationship) of a reward or aversive, the removal (contingency relationship) of an aversive or reward, or the prevention (contingency relationship) of an aversive or loss of a reward.

Behavioral effects: the combination of a behavioral contingency relationship and a reward or aversive.

So now we can say:

<p style="text-align:center">Effect</p>

<p style="text-align:center">act ⟶ │contingency relationship ⟶ reward or aversive│ ⟶ act</p>
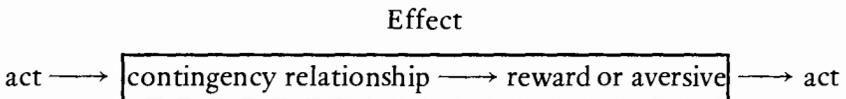
To know how a behavioral effect will influence future behavior, we

must know the nature of the contingency relationship (presenting, removing, or preventing) between the act and its **following stimulus**, as well as whether the stimulus was a reward or an aversive.

In the next six sections we will look at these basic contingency relationships in more detail.

- 1 Define a behavioral contingency relationship and give an example with a presentation and removal of a reward and the presentation and removal of an aversive (four examples); then, give an example of preventing the loss of a reward and the presentation of an aversive (two examples).

- 2 Define behavioral effects, stating the two basic components that make them up.

REINFORCEMENT PROCEDURES

Rewards and Reinforcement Procedures

Let's look at a reward-based contingency relationship — a presenting relationship where the behavior produces rewards. Such an effect increases the likelihood of behavior. For instance, Monday morning you get out of bed and go into the kitchen. You pour yourself a glass of orange juice and guzzle it down. It tastes sweet and refreshing, like it has every morning for years. Rewarding. And we all repeat those acts that produce rewards. So you drink orange juice because that act has produced rewards. This shows one aspect of the Law of Effect: We repeat acts that have some kinds of effects. Rewarding effects. We drink the o.j. because of the effect. The drinking (act) has had a behavioral effect in the past — it has produced (contingency relationship) a sweet, cool taste (unlearned reward).

Remember, a behavioral effect is a combination of a behavioral contingency relationship and a reward or aversive. This behavioral effect is associated with a procedure that makes the act more likely — a **reinforcement procedure**.
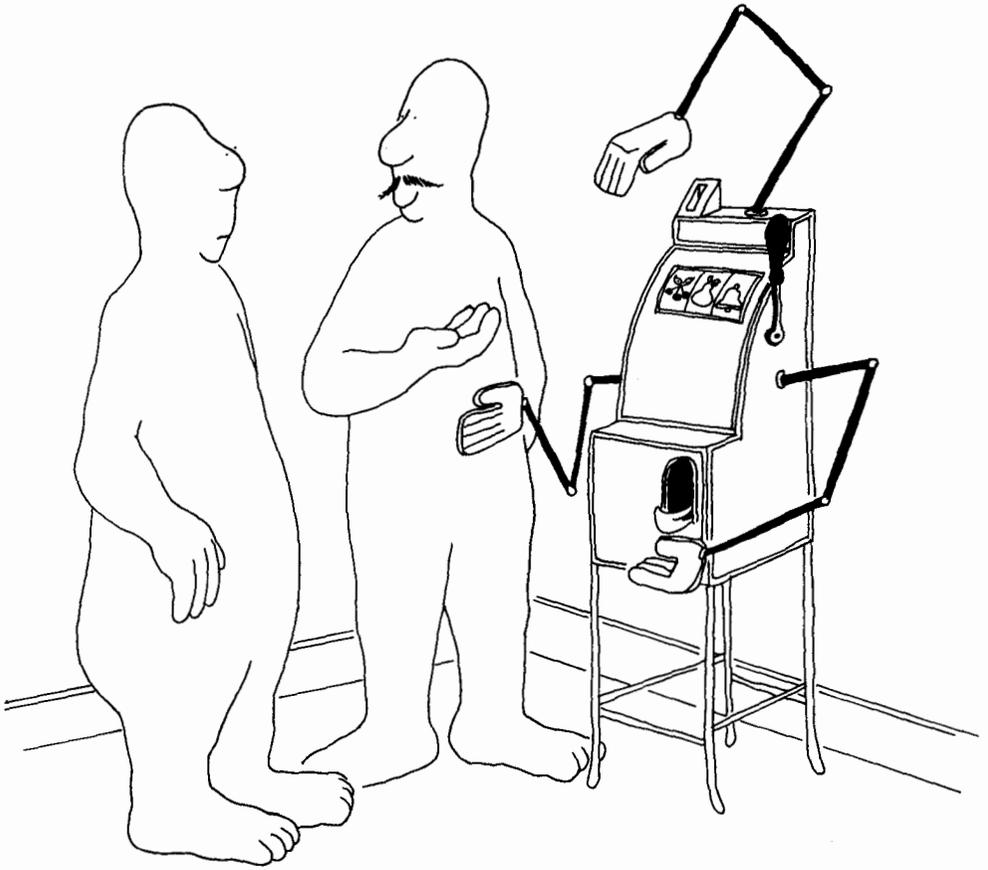
It's the newest model. When you hit the jackpot, it shakes your hand, pats you on the back, and puts the money in your pocket.

Reinforcement procedure: a behavioral effect that increases the likelihood of behavior, either through the contingent presentation of a reward or the removal of an aversive.

Producing rewards is a reinforcement procedure because it is a behavioral effect that **increases** the likelihood of behavior. So the good taste from drinking the o.j. is a reinforcement procedure. We have a term for the results of these procedures; that term is **reinforcement process.**

Reinforcement process: the increase in likelihood of behavior resulting from the reinforcement procedure.

So a reinforcement procedure is a behavioral effect that will increase the likelihood of an act. For instance, drinking orange juice is a reinforcement procedure; it's a behavioral effect (drinking produces a rewarding taste). The result of this procedure is that the drinking response becomes more likely — the reinforcement **process.** The reinforcement procedure results in the reinforcement process — an increase in an act's likelihood. Let's look at a few more cases of a reinforcement procedure based on rewards. Many of our actions result from the process tied to such procedures.

★   ★   ★

Now you move on to the bathroom to stand under a nice hot shower. That feels good. It's a reward. And showering also becomes more likely (reinforcement process) because of that procedure where showering (act) produces (contingency relationship) hot water (unlearned reward).

Next you put a white substance on a brush and stick it in your mouth. Umm. Another sweet taste. So toothbrushing becomes more likely (reinforcement process) because of a procedure where toothbrushing (act) produces (contingency relationship) a peppermint taste (unlearned reward).

But one does not live by unlearned rewards alone. You brush your hair. You put on your new boots, your old jeans, and your faded

Levi jacket. Then you look in the mirror. What a sight! Wow! A re-
ward, and we would suggest a learned one, since a few years ago no
one liked boots and jeans like those. So why do you groom and dress
as you do? And why do you check out the total impact in the mirror?
Reinforcement process. That sequence of acts has a high likelihood
because it has produced (contingency relationship) such a fantastic
sight (learned reward). At least that's probably one of the reasons.

And now it's off to the library to start work on your term paper,
"The Role of Social Rewards for Nihilism from Ivar Turganev to Jerry
Rubin." But when you get to the library, you drift into the current
periodicals room, where you find all sorts of great magazines to
browse through. And why do you find yourself spending so much
more time than you'd planned looking through the magazines? A
reinforcement process. You keep browsing because the act has pro-
duced (contingency relationship) great pictures and exciting new
ideas (learned rewards).

At last you pick up a nineteenth-century Russian book and start
to read. But every few sentences, you find yourself thinking about
the great date you had last night, hoping you can repeat it tonight.
You even find yourself smiling when you're out there in fantasyland.
Reinforcement procedure again. Your daydreaming (act) is taking so
much of your time because it produces (contingency relationship)
thoughts about your dates, past, present and future (learned rewards).
One more learned reward for goofing off that we serious scholars
must learn to deal with.

Oh! Look who just walked in the library. The person you were
daydreaming about. Chance? Perhaps. But you did mention you'd be
here this morning. Your world is full of all sorts of learned rewards,
like the sight of your friend.

- 3 Define reinforcement procedure and process, and describe them
  in terms of the sort of contingency relationship that would be
  used with a reward to increase behavior.
- 4 Cite two cases of reinforcement with rewards using unlearned
  rewards and two using learned rewards.

Aversives and Reinforcement Procedures

We've just looked at a reward-based contingency relationship. Now, let's look at the first aversive-based contingency relationship — a removal relationship, where the act removes an aversive. Such an effect also increases the likelihood of behavior. For instance, it's Tuesday morning and you're crawling out of bed once again. Out of bed and into a cold room. You had set the temperature at 50° the night before, because you believe in saving fuel. And now you stand there shivering for a few moments, before you hop back into the warmth of your bed — an act that is likely to occur because of the effects it produced in the past. That act removed (contingency relationship) the coldness (aversive).

And we all repeat those acts that get rid of aversives. So we won't be too surprised in the future if we see you dancing back and forth between the cold air and your bed. Again, the Law of Effect: We repeat acts that have certain kinds of effects — that remove aversives. This behavioral effect is another type of reinforcement procedure — one based on the removal of aversives.

Let's look at a few more cases of reinforcement procedures based on the removal of aversives. You lie in bed feeling more and more discomfort, as pressure builds up inside you. So you relieve the pressure with a visit to the bathroom. The reinforcement procedure increases the likelihood of your act of going to the bathroom. That act removed (contingency relationship) the pressure (unlearned aversive).

Such acts often seem so natural to us that we rarely take the time to analyze them in terms of their underlying behavioral processes. Now, how about analyzing your act of turning down the hot water when your shower starts scalding you. Again, this is a reinforcement procedure based on aversives. Turning down the hot water (act) removes (contingency relationship) the pain (aversive).

Now you turn on the "Today Show" and sit down to catch a few minutes of it. But soon your stomach starts to churn as you begin to worry about your term paper. And watching the tube won't help much, even if Gene Shalit happens to be doing an interview with Diane Keaton. So you hit the "off" switch on the TV and head for
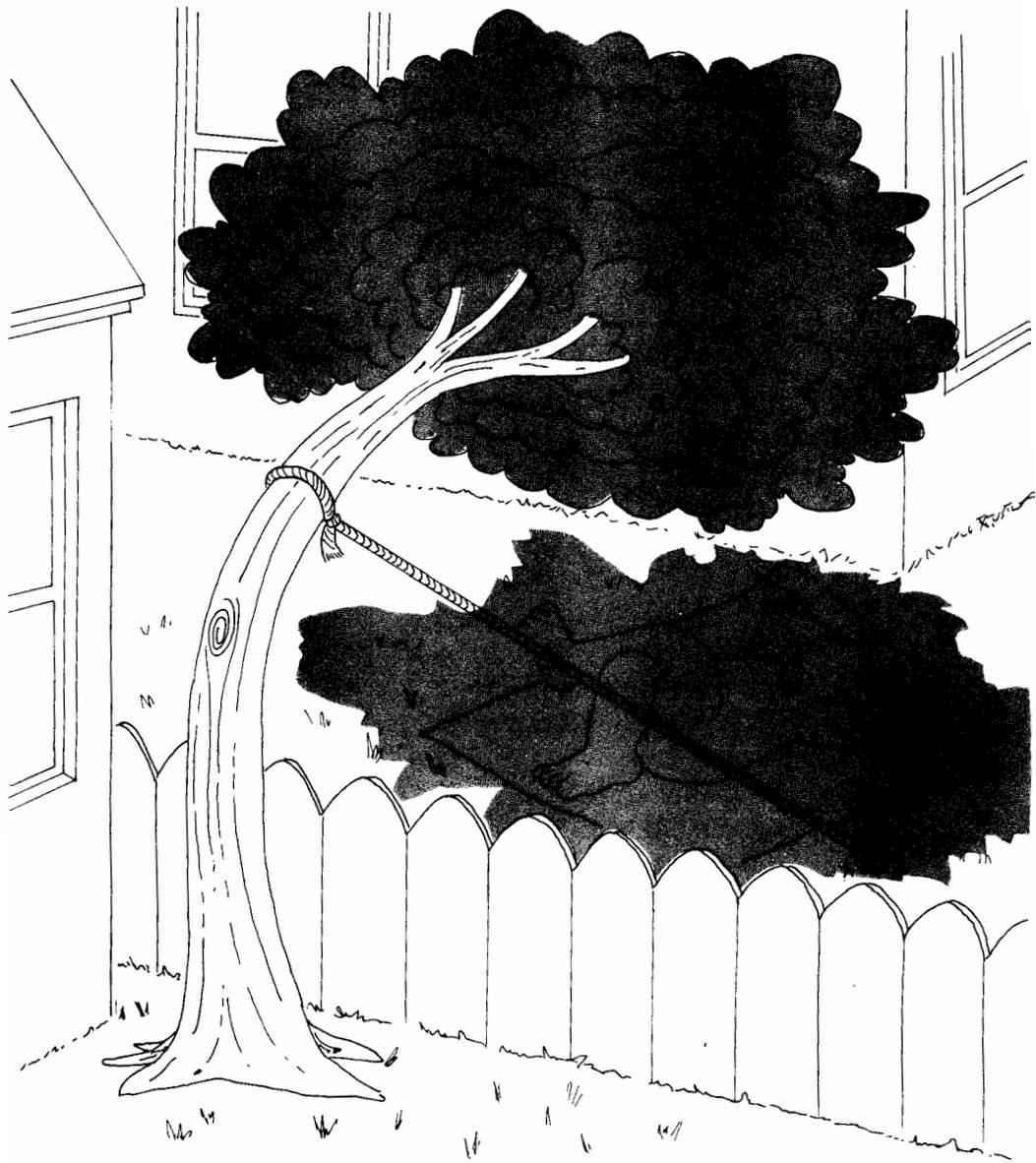
the library. And as you settle down for some hard work, your aversive thoughts and physiological reactions vanish. Past reinforcement effects increase the likelihood of your act of getting down to work. That act removes (contingency relationship) those physiological reactions (unlearned aversive) and negative thoughts (learned aversive).

At the library, you find you must go to the seventh floor to get a rare and ancient book — *The Role of Reinforcement Procedures in the Conversion of a Yippie to a Disciple of Maharishi Ji.* So, against your better judgment, you get into an elevator that should have been condemned 20 years ago. And you don't feel any better when you see graffiti scrawled across the wall reading, "Load Limit: 25 lbs." By the time you reach the second floor, you can't tell which is shaking more, you or the elevator! So you push the panic button and hop off; what the heck — you need the exercise anyway. Past reinforcement effects make your act of getting off the elevator more likely. That act removed (contingency relationship) contact with the shaky elevator (learned aversive).

Now, before we go on, let's review the two kinds of reinforcement procedures we've studied so far. First we looked at a reinforcement procedure based on a presentation contingency relationship, where an act presents a reward. Then we studied a second reinforcement procedure based on a removal contingency relationship, where an act removes an aversive. Both of these reinforcement procedures increase the likelihood of acts they involve. Here's a summary:

PROCEDURE	BEHAVIORAL EFFECT		PROCESS
	Rewards	Aversives	
Reinforcement	Present	Remove	Increase in likelihood of act.

- 5 Describe the reinforcement procedure in terms of the sort of contingency relationship that would use an aversive to make behavior more likely.
- 6 Cite two cases of reinforcement using unlearned aversives and two cases using learned aversives.

- 7 Review: Describe each of the two reinforcement procedures by
  stating the behavioral effect involved with each.

PUNISHMENT PROCEDURES

Rewards and Punishment Procedures

Let's look at a second reward-based contingency relationship — a re-
moval relationship where the behavior removes rewards. Such an ef-
fect decreases the likelihood of behavior. For instance, on Wednesday
morning you crawl out of bed and stumble into the kitchen where
you squeeze the last drops of orange juice out of the pitcher and into
your Yogi Bear glass. But you slop enough over the side of the glass
to almost cover Yogi. You close your eyes, open your mouth, tilt
back your head and raise the glass toward your lips. But the slippery
thing slithers right out of your hand and onto the floor, breaking
Yogi into bits and dumping orange juice all over.

We all stop acting in ways that cause us to lose rewards. So most
likely you'll take a little more care with your o.j. and your next Yogi
glass. And there we have the other version of the Law of Effect: we
stop doing things that have some kinds of effects. Aversive effects. In
this case, we stop being careless (action) because being careless took
away (contingency relationship) our o.j. (unlearned reward), and our
favorite glass (learned reward). Again, a behavioral effect is a combi-
nation of a behavioral contingency relationship and a reward or aver-
sive. This behavioral effect is associated with a procedure that makes
the act less likely — a **punishment procedure.**

Punishment procedure: a behavioral effect that decreases the likeli-
hood of behavior, either through the contingent presentation of an
aversive or the removal of a reward.

Punishment process: the decrease in likelihood of behavior result-
ing from the punishment procedure.

Let's quickly review again how a procedure differs from a pro-

cess. A punishment procedure is a behavioral effect that will decrease the likelihood of an act. For instance, picking up your slippery glass of orange juice and then dropping it is a punishment procedure; it's a behavioral effect (picking up a slippery glass removes the glass). And the result of this procedure is that picking up a slippery glass becomes less likely — the punishment **process**. The punishment procedure results in the punishment process — a decrease in an act's likelihood.

Let's look at a few more cases of punishment based on the loss of rewards. You turn on the dishwasher, full of dishes from days gone by; then you go into the bathroom, seeking the solace of a nice, hot shower. You climb into the shower and start to relax under the hot water pouring out of your shower — good, cheap, hydrotherapy.

But in the kitchen, the dishwasher has heated up and now it starts filling with water. This causes the hot water to stop flowing through the meager plumbing into your shower. Oh, oh. In the future, you'll be much less likely to turn on the dishwasher just before taking a shower. That act decreases in likelihood — a punishment process resulting from this punishment procedure: turning on the dishwasher (act) has removed (contingency relationship) the hot water (unlearned reward). Just one more in a series of life's painful lessons. It takes a few years for most of us to get our act down tight.

Still damp, you slip on your favorite jeans — tight is right — just out of the laundry. Feelin' good. You bend over to tie the strings on your platforms when . . . rrriipppp. Oh, oh. There go your jeans — and not on a seam either. The act of bending over in tight jeans is made less likely because of its effect — it caused you to lose (contingency relationship) your best jeans (learned reward).

You're back in the library now, sitting with your favorite learned reward, and talking about your favorite author — Terry Southern. You begin an explicit Southern analysis of the human body when . . . "Hey, where ya goin'?! What? Well, I didn't mean . . . Hey, waita-minute . . ."

You can rest assured you won't repeat that crudeness again should you get one more chance with that person. (Your crudeness was made less likely by the loss of another learned reward.)

- 8 Define punishment procedure and describe that procedure and process; then, describe them in terms of the sort of contingency relationship that would be used with a reward to weaken behavior.
- 9 Cite two cases of punishment with rewards using unlearned rewards and two using learned rewards.

Aversives and Punishment Procedures

Let's look at the second aversive-based contingency relationship — a presentation relationship where the act presents an aversive. Such an effect decreases the likelihood of behavior.

On Thursday morning, when you smell the toast burning, you jab a table knife into the toaster (act), which presents (contingency relationship) a jolt of electric current that knocks you across the kitchen (unlearned aversive). A punishment procedure. The shock will, indeed, decrease the likelihood of jabbing a knife into the toaster.

And we all stop those acts that bring on aversives. Once again, the Law of Effect in its electrifying elegance: we stop acting in ways that have certain effects — that present aversives. This behavioral effect is another type of punishment procedure — one based on the removal of aversives.

You're running a little late when you hop into your brand new VW, throw it in reverse, and blast out of your parking lot, only to leave a three-inch strip of paint on the fire hydrant at the end of the drive. As you check out the left rear fender, you see a grim reminder of the old saying about haste and waste. You'll be more careful in the future. A punishment process makes your careless driving (act) less likely. That act produced (contingency relationship) the scrape on your car's fender (learned aversive). If it had been a scrape on your own rear end rather than your car's, it would have been an unlearned aversive rather than a learned one.

Once in the library, you have a little trouble locating many reports on the role of the punishment process in political conversion. So you ask the reference librarian how to use the *Psych Abstracts,* and he puts a technical trip on you that won't stop. You crawl away from

I wonder what that bird's going to do when she finds her eggs missing?

his desk reeling with terms, but without the first notion about how to find the reports. Why did you have to ask an expert anyway? Maybe a friend can help you with that one. One of the things involved here seems to be a punishment process. Your asking the expert for help (act) has most likely decreased in likelihood because that act produced (contingency relationship) more facts and details than you could handle (learned aversive). This seems like the reverse of learned rewards based on control. Not being competent enough to control our world may be a learned aversive.

Just before noon, you venture to suggest to your friend that the two of you go over to the Student Union for lunch — a new move on your part. But your friend replies, "Oh gee, I'm sorry, but I've got other plans." So there you sit — unloved. An interesting punishment procedure. Your luncheon request (act) produced (contingency relationship) the reply that your friend would rather have lunch with someone other than you. You'd rather eat alone for the rest of your life than suffer the torment of one more rejection.

Again, before we go on, let's review the two kinds of punishment procedures we've studied. First we looked at a punishment procedure based on a removal contingency relationship, where an act removes a reward. Then we studied a second punishment procedure based on a presentation contingency relationship, where an act presents an aversive. Both of these punishment procedures decrease the likelihood of acts they involve. Here's a summary:

PROCEDURE	BEHAVIORAL EFFECT		PROCESS
	Rewards	Aversives	
Punishment	Remove	Present	Decrease in likelihood of act.

- ■10 Describe the punishment procedure in terms of the sort of contingency relationship that uses an aversive to weaken behavior.
- ■11 Cite one case of that procedure using unlearned aversives and three cases using learned aversives.
- ■12 Review: describe each of the two punishment procedures by stating the behavioral effect involved with each.

AVOIDANCE PROCEDURES
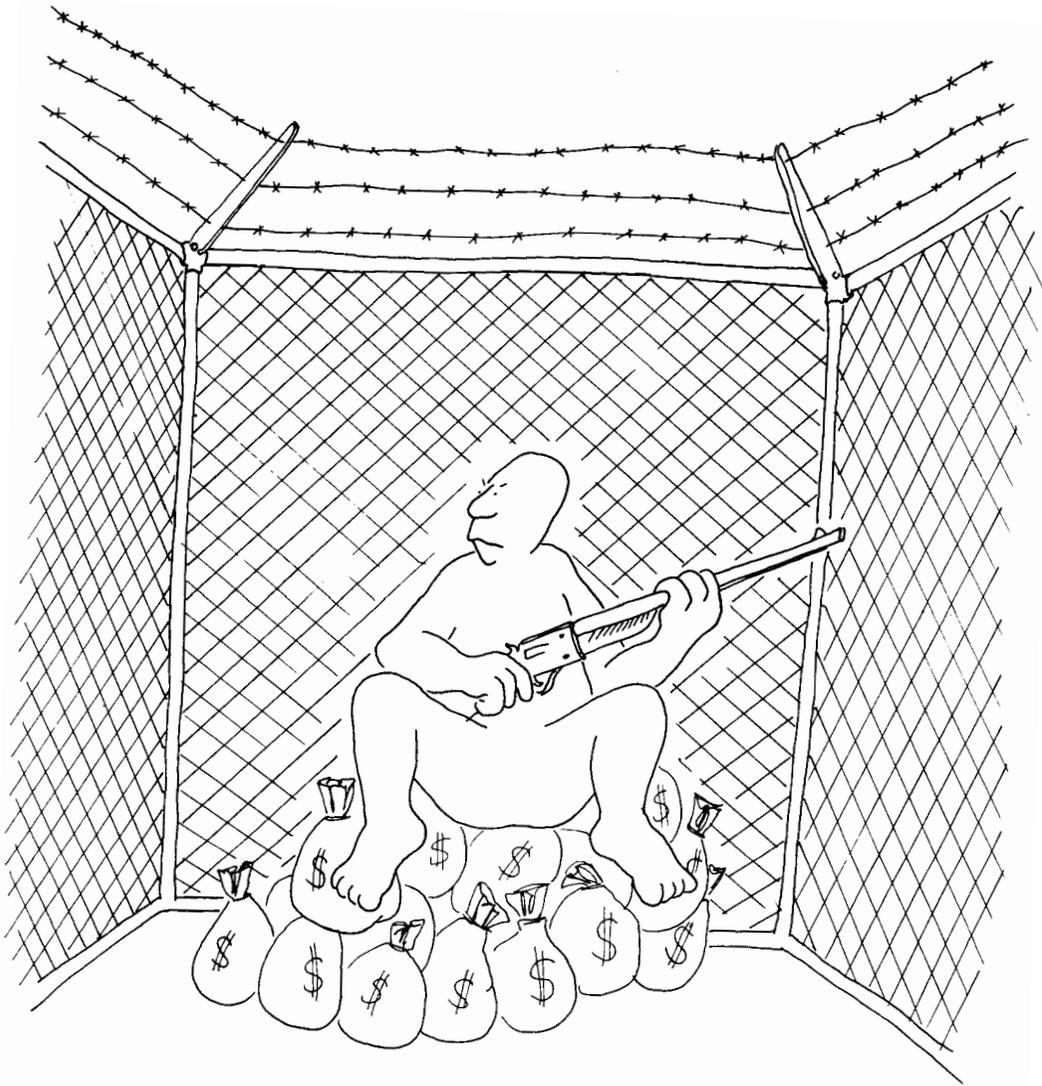
Rewards and Avoidance Procedures

We have just seen how the loss of rewards can decrease the likelihood of behavior. Now let's look at our third reward-based contingency relationship — one where the behavior prevents that loss of rewards. Such an effect increases the likelihood of behavior. For instance, on Friday, you go into the kitchen, where you stuff a couple of pieces of bread into the toaster. Then you collapse at the breakfast table before nodding out once again. But a few minutes later, the smell of something burning causes you to force one eye open. You think your vision is still a little blurred until you see the kitchen filling with smoke from the toaster. The toast is jammed and won't pop up. Your tired old body lumbers into action as you grab a wooden spoon and lurch over the toaster to pry out the remains of the two charred hulks. You manage to salvage enough to make up one piece of toast.

Now we all repeat actions that prevent the loss of rewards. So you'll be standing by with spoon in hand the next time the toaster's toasting. And once again, we have the Law of Effect: we repeat acts that have some kinds of effects. We rescue our toast with a prying spoon (action), because of the effect — the rescue prevents the total loss (contingency relationship) of our toast (unlearned reward). Remember, a behavioral effect is a combination of a behavioral contingency relationship and a reward or aversive. This behavioral effect — preventing the loss of a reward — is one form of the **avoidance procedure**, which, like the reinforcement procedure, makes acts more likely.

Avoidance procedure: a behavioral effect that increases the likelihood of behavior through the prevention of some event, either the prevention of the presentation of an aversive or the loss of a reward.

Avoidance process: the increase in likelihood of behavior resulting from the avoidance procedure.

And how does the avoidance procedure differ from the avoidance process? An avoidance procedure is a behavioral effect that will in-

crease the likelihood of an act. For instance, prying your burning toast from the toaster so as to save enough for one piece is an avoidance procedure; it's a behavioral effect (removing the toast prevents the loss of a reward). And the result of this procedure is that removing the burning toast from the toaster becomes more likely — the avoidance process. The avoidance procedure results in the avoidance process — an increase in an act's likelihood.

You may have noticed that our definition of avoidance is the same as reinforcement, except for the contingency relationship. In the case of reinforcement, the response becomes more likely when it produces a reward that wasn't there. In the case of avoidance, the response becomes more likely when it prevents the loss of a reward that's already there. But in both cases the response increases in likelihood. So in that sense, they work in much the same way.

Thus far, we've seen one form of avoidance — the one based on keeping rewards. Now, let's look at a case of avoidance based on losing rewards.

After a hearty breakfast of scorched toast and no juice, and a cold shower, you rub a little Pepsodent across your teeth, and shoot a little Arid Extra-Dry in the direction of your underarms. Now you're prepared, just in case you should happen to run across your friend at the library. But what do you think controls all this getting ready? Social rewards? People saying, "Oh your breath is so fresh, and I just love that nice chemical smell coming from under your arms." Of course not. You're trying to avoid people wrinkling up their noses and making another hasty exit as soon as they get downwind of you. The avoidance procedure — your hygiene (act) prevents the loss (contingency relationship) of your friend (reward).

This case also shows that more than one procedure can control our actions at the same time. A reinforcement procedure with the nice, hot shower, as well as avoidance of losing your friend, controls your bathing. A reinforcement procedure involving the Pepsodent taste, as well as avoidance of losing your friend, controls your toothbrushing.

And why did you go to the library in the first place? To work on your paper. And why do that? Many reasons. One is the reinforce-
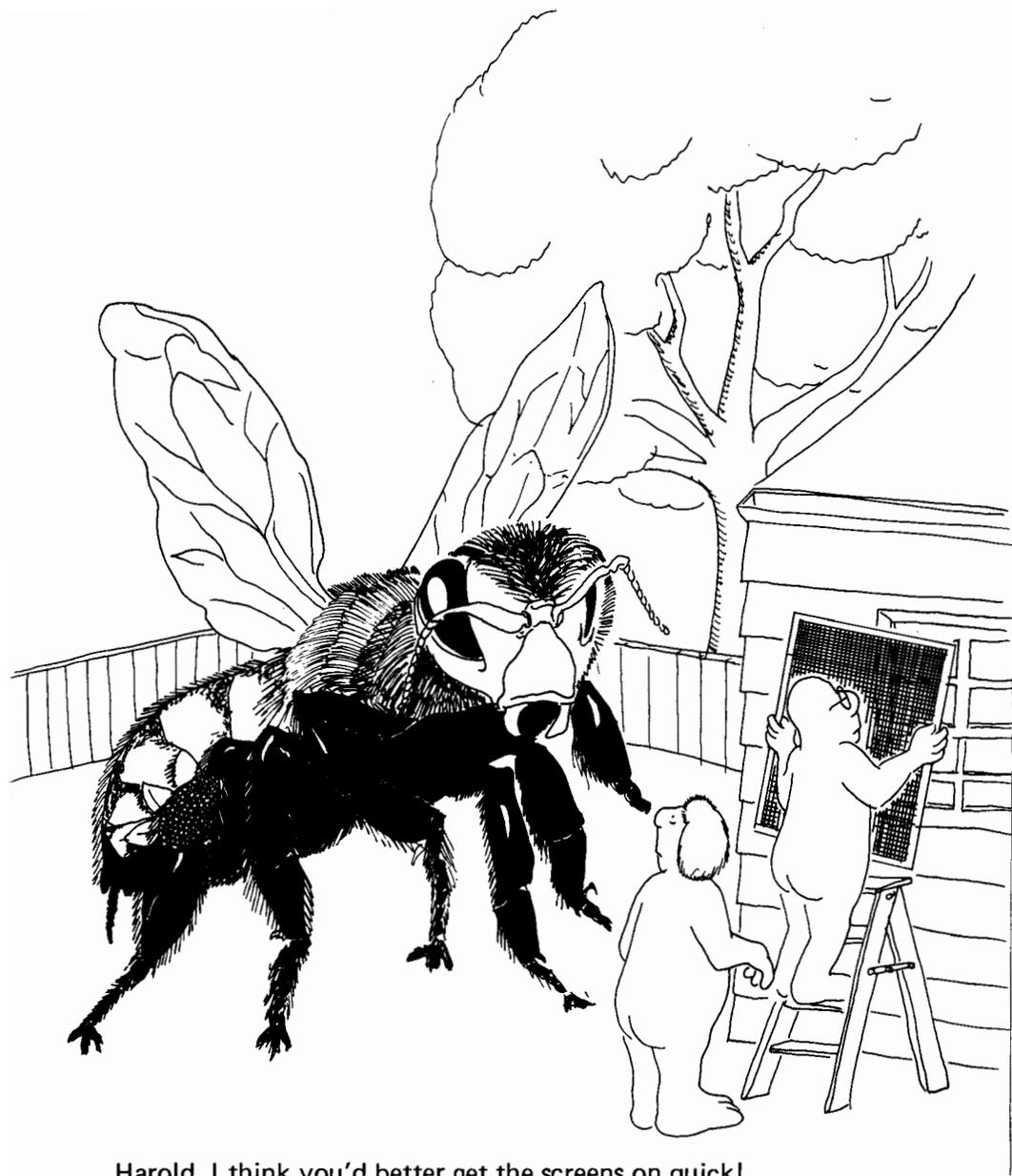
Harold, I think you'd better get the screens on quick!

ment process, resulting from the procedure where studying produced the rewards of learning new things, doing a good job and getting social approval and a good grade from your teacher. But another is avoidance of doing a bad job and flunking out of school. School may not be the greatest thing you can think of. But it might be the greatest thing you've got going for you when the option is to go back home, where nothing's happening, as opposed to staying there with your friends, where a lot's happening. So preventing the loss (contingency relationship) of all your friends and activities at school (rewards) helps control your hard work with the books (act).

- ■13 Define avoidance procedure and describe that procedure in terms of the sort of contingency relationship that would be used with a reward to increase the likelihood of behavior.
- ■14 Cite one case of avoidance using unlearned rewards and two using learned rewards.
- ■15 Cite two cases where behavior is maintained by a reinforcement process and an avoidance process at the same time.

Aversives and Avoidance Procedures

We've already talked about one kind of avoidance procedure: a **preventing** relationship based on preventing the loss of rewards — which increases the likelihood of acts that prevent the loss of rewards. But a second type of avoidance procedure increases the likelihood of acts that prevent the presentation of aversives. This is the sixth of our basic procedures. And this type of avoidance procedure controls many of our actions — more than we might care to admit. For instance, the alarm rings. You reach out and turn up the thermostat to 72 degrees before falling back to sleep for a little while longer — after all, what are Saturdays for? No more freezing. You've learned to stay away from that 50° air outside your snug bed. And most likely, you'll turn that thermostat up every morning (act), because it prevents the occurrence (contingency relationship) of the cold air (unlearned aversive). The act increases as a result of the avoidance process. Now you'll be as warm as toast when you get up at 9:00 a.m.

And there again we have the Law of Effect: we repeat actions that have certain effects — those that prevent the presentation of aversives.

And what happens when you get ready to take a shower? You briefly stick your hand through the stream of water before trusting your whole body to it. Why? Avoidance once again. You brief hand test (act) prevents (contingency relationship) your burning or freezing your body (unlearned aversive).

Now, why are you working so hard on your term paper? Because you'll reap many rewards if you do a good job? Yes, but working hard (act) also prevents (contingency relationship) bad grades from your teacher, bad words from your parents, and bad feelings from yourself (all learned aversives). Even "A" students seem to be avoiding learned aversives, like the disgrace and dishonor of getting "only a 'B'."

But even if you are an "A" student, your friend doesn't love you. You're sure of it. So you spend all of your lunch hour in deep despair. Then you go to a one o'clock lecture where you don't have a chance to sink into self-pity — you're too busy taking notes. And now you should go home and study, but you know you won't do anything but sit around feeling sorry for yourself. Ah, you've got it! You'll get into your scarred but friendly (not like some people we know) VW and go catch a flick, the matinee. That'll postpone your thinking about the fickle nature of love. More avoidance. Going to the movies (act) postpones (contingency relationship) your mulling over your unhappy love life (a learned, social aversive).

Why isn't the flight to the movie an instance of a reinforcement procedure based on the removal of your depressed thoughts (learned aversives)? Because you head for the movies right after you finish the one o'clock lecture — before you have a chance to suffer any more. At that point, you're avoiding, or preventing the occurrence of, the learned aversive before it gets to you again; you're not removing it once it's there. (But it would have been a reinforcement procedure based on the removal of an aversive if you hadn't left for the movie until you were back in the morass of your bad thoughts.)

Now, before we conclude, let's review the two kinds of avoidance

procedures we've studied. First, we looked at an avoidance procedure based on a preventing relationship, where an act prevents the loss of a reward. Then we studied a second punishment procedure, again based on a preventing relationship, where an act prevents the occurrence of an aversive. Like the reinforcement procedures, both avoidance procedures increase the likelihood of the acts they involve. The reinforcement and avoidance procedures differ in the behavioral contingency relationships involved; a reinforcement procedure can be based on either a preventing or removing relationship, while an avoidance procedure is always based on a preventing contingency relationship. Here's a summary:

PROCEDURE	BEHAVIORAL EFFECT		PROCESS
	Rewards	Aversives	
Avoidance	Prevent removal.	Prevent occurrence.	Increase in likelihood of act.

- ■16 Describe the avoidance procedure in terms of the sort of contingency relationship that was an aversive to increase the likelihood of behavior.
- ■17 Cite one case of that procedure using unlearned aversives and two cases using learned aversives.
- ■18 Review: describe each of the two avoidance procedures by stating the behavioral effect involved with each.

CONCLUSIONS

In this chapter we've looked at the three basic procedures, two of which increase the likelihood of behavior — the reinforcement and avoidance procedures — and one of which decreases the likelihood of behavior — the punishment procedure. And we've also seen how all three procedures can be based on either rewards or aversives, depending on the behavioral contingency relationship involved. These behavioral contingency relationships combine with rewards and aversives

to produce behavioral effects, which determine what we do, what we are.

Throughout these sections we've given you a number of small summary tables. Now, we can put these together to form a final table of the three basic procedures (see Table 2.1). We've found the table useful in writing this book, and we hope you, too, will find it helpful.

TABLE 2.1

The Contingency Relationships of Behavior

PROCEDURE	BEHAVIORAL EFFECT		PROCESS
	Rewards	Aversives	
Reinforcement	Present *Positive ref*	Remove *Negative ref*	Increase in likeli-hood of act.
Avoidance	Prevent removal.	Prevent occurrence.	Increase in likeli-hood of act.
Punishment *only one that decreases behavior*	Remove	Present	Decrease in likeli-hood of act.

ENRICHMENT

We've introduced a fair number of nonstandard terms and usages in these first two chapters. So now let's stand back and look at them. You often need new terms when you write a book like this — a book that tries to present a uniform outline of a whole field. This need may arise because of the way most areas of knowledge develop: people introduce terms to deal with one topic. But later those terms may imply things about other topics, and they may leave gaps in logic, or gaps in the field, or present concepts that aren't consistent.

In all cases, we've tried to use terms in accord with their lay use. But sometimes we've also tried for what we think might be a slightly more precise use than may have always been the case in the field of behavioral analysis. "Aversive stimulus," "reward," "contingency relationship," and "behavioral effect" are examples of this effort.

Aversive Stimulus

First let's look at "aversive stimulus." We wanted a general term to mean a stimulus that might function in a punishment procedure, a reinforcement procedure or an avoidance procedure. In the past, people defined that stimulus in terms of either a punishment or reinforcement procedure, implying that a stimulus fitting that definition would function equally well in all three procedures. But that needn't always be the case. A stimulus that might act as an aversive in a reinforcement procedure, for instance, may not work in a punishment procedure. In other words, that same stimulus may increase the likelihood of acts when it's removed, but fail to decrease the likelihood of acts when it's presented.

■19 Why don't the authors define the aversive stimulus in terms of either a punishment or reinforcement procedure?

Behavioral Effect

Though it derives directly from the Law of Effect, our use of the term "behavioral effect" is somewhat novel, since behavior analysts have not generally dealt with a term that includes both the contingency relationship and the reward or aversive.

Positive and Negative Reinforcer and Reinforcement

We've avoided four terms behavior analysts commonly use — namely, positive and negative reinforcer, and positive and negative reinforcement. A positive reinforcer is a reward that increases the likelihood of the act that produces it, while a negative reinforcer is an aversive that increases the likelihood of the act that removes it. Thus, positive reinforcement is based on the presentation of positive reinforcers (what we would call "rewards"), while negative reinforcement is based on the removal of negative reinforcers (what we would call "aversives").

The concept of negative reinforcer often confuses people. They

tend to think of negative as meaning aversive, and reinforcer as meaning reward. So "negative reinforcer" seems like "aversive reward" — a contradiction in terms. They don't think of negative as denoting a removal contingency relationship following a response, and a negative reinforcer as meaning an aversive that increases behavior by its removal.

Sometimes people also have trouble identifying the negative reinforcer. For instance, it's raining outside, so you put up your umbrella and escape the falling rain. What's the negative reinforcer? Many people make the mistake of pointing to the umbrella, when, in fact, the rain is the negative reinforcer (again, what we would call the "aversive stimulus"). The problem is that they read "reinforcer" to mean "something good." And things are clearly good when you're under the umbrella. So the umbrella may seem like the negative reinforcer, because that condition is also good. We can prevent this confusion by simply avoiding the term negative reinforcer and using the term aversive stimulus instead. That way, it's so much clearer that the rain and not the umbrella is the aversive stimulus. (This is an example of the reinforcement process: putting up the umbrella (act) increases in likelihood because it has removed (contingency relationship) the rain (aversive stimulus).

Many behavior analysts often use the terms "positive reinforcer" and "negative reinforcer" in much the same way we use our terms "rewards" and "aversive stimulus." They do this even though they define those concepts solely in terms of the reinforcement procedure with no reference to the punishment procedure. We've already discussed the restrictive factors involved in such a definition. But these standard terms also present a problem in that they have little meaning for most laymen.

In addition, people often call the punishment procedure a negative reinforcement procedure though it is not — a common error resulting from the misleading terms "negative reinforcer" and "negative reinforcement." And, they often say a response was negatively reinforced in a punishment procedure, even though the response was made less likely (punishment procedure) rather than more likely (reinforcement procedure). The confusion again results from the notion

that a "negative" is any aversive involved in the punishment proce-
dure.

Behavior analysts sometimes object to the use of the term "re-
ward" because it may connote meanings not intended by a technical
term. Reward can also mean "a prize," but a prize may not always in-
crease the likelihood of the act it followed, even though its giver
hopes it will. Our feeling is that the amount of confusion between
the technical and lay use of the term reward will be small, compared
to the amount of confusion almost always produced by the more
commonly used behavioral terms — positive and negative reinforcer.

In any event, students will often meet the terms positive and
negative reinforcer when doing further reading in the field of behavior
analysis. We think they will be able to handle such terms on an intui-
tive basis, having become familiar with the concept of reinforcement
procedure in the present book; they should have no more difficulty
at that time than if we had used those more common terms through-
out.

Procedure

The term "procedure" (as in reinforcement procedure) may imply de-
liberate manipulation that it doesn't warrant. The word "procedure"
may suggest something we do in a scientific lab, but procedures are
at work in natural settings too. Take, for instance, an animal in the
woods. Its response may become more likely due to some natural ef-
fect that response produces, (e.g., a deer goes to the salt lick because
of the unlearned rewards that action naturally produces). So we use
the term procedure to describe the action of the behavioral contin-
gency relationship and the reward or aversive, regardless of where it's
taking place and regardless of whether someone intended to use that
procedure.

▪20 Be able to describe the scope of the authors' use of "procedure."

Behavioral Contingency Relationship

We said a behavioral contingency relationship is a causal relation be-

tween a response and a reward or aversive. This definition is in accord with the standard usage in behavior analysis, but some informal usage seems a little faulty. For instance, people may speak of "the reinforcement contingency" when they should speak of "the reinforcement procedure," since the reinforcement procedure can involve either a presentation or a removal contingency relationship, depending on whether you're dealing with a reward or an aversive (i.e., the removal of an aversive or the presentation of a reward).

At other times, some behavior analysts may say "we behave as we do because of the contingencies," when they would be more correct to say, "we behave as we do because of past behavioral effects that followed our actions." Or, they might just be using the term contingencies as short for contingency relationships, which would be more appropriate, since they would now be saying we behave the way we do now because of the past presentations of rewards and the past removal of aversives. That too, however, is a little incomplete as it leaves out both punishment and avoidance procedures.

Purposivism

Most scientists, philosophers and even the people next door agree that things in the future haven't happened yet. Things that haven't happened yet can't affect things that are happening now. So they believe events in the future can't affect the present. Only past and current events can affect the present. But our everyday language tends to cause us to talk as if the future does affect the present. We might make the mistake of saying, "That response is occurring because it will get a reward." But, as scientists, we should say, "That response is occurring because, in the past, it has gotten rewards." We must account for the present in terms of current or past events. We can't rely on the future to explain the present. Doing so is called teleology. It is a false, teleological argument to say that something in the future affects something in the present.

Teleology: the doctrine that states future events can affect present events.

We might also say, "Susie is going to college so she can get a BA degree and become a success in the business world." This is a form of teleology called **purposivism**. We ascribe a purpose to an action. But to do that is to say that some future goal is controlling present behavior — a faulty argument of teleology. In essence, we're saying, "Susie has a purpose for going to college. Her purpose is to achieve some goals — a degree and success." But goals occur in the future, and the future can't affect the present. So we can't account for a person's actions by referring to their purpose. We can only create a false sense of understanding with purposivism.

Purposivism: the doctrine that states actions have purposes causing them to occur.

As scientists, we should say, "Susie is going to college because of past and current factors — factors like instructions from her parents, or seeing that people who go to college seem to have successful, productive lives." But what might happen in the future can't affect her now. And here is a good reason why: what might happen in the future also might not happen — and surely something that never will happen can not affect something that's currently happening. Susie might drop out of college at the end of her freshman year and never return. In that case, her getting a BA degree couldn't have caused her to go to college since she never got it.

In the first analysis of why Susie went to college, you should note the words "so she can." Expressions like that are almost always purposivistic and therefore inadequate as a scientific account of behavior. The same is true of "to get." "I went to the store to get a loaf of bread." "To get" implies that the future event of getting the bread controls your current actions — a purposivistic explanation. Instead, you should say, "I went to the store because I need some bread and, in the past, that act produced bread."

To be logically tight, we must always be on guard against purposivistic or teleological statements.

■21 Define purposivism and teleology. Why do we try to avoid them?

Activation Syndrome

The activation syndrome is a physiological response involving increased breathing, heart rate, etc. It can function both as an aversive and as a reward. It functions as an aversive when we feel guilty about not studying. But it functions as a reward when we go to thrilling movies. Psychologists say that whether we label the activation syndrome as a rewarding or aversive emotion depends upon the situation. For instance, skydivers jumping out of planes. The nature of the activation syndrome produced by the jump may be the same for each diver. But whether they label it as fear and anxiety or thrill and excitement depends upon the diver's history.

So we wish to suggest that the activation syndrome can act as a learned reward or aversive (at least up to some intensity and duration, though perhaps at all intensities and durations). And the activation syndrome may also be a conditional reward or aversive. That is, it functions as a learned aversive in settings where it has been paired with other aversives, causing us to call it a negative emotion (e.g., the activation syndrome when the child sees an angry parent rushing toward her with birch rod in hand). And it functions as a learned reward in settings where it has been paired with other rewards, causing us to call it a positive emotion (e.g., perhaps the activation syndrome when the child sees a playful parent rushing toward her in mock rage).

But under physical exercise, the activation syndrome may have had no special pairing with other rewards, so we may call it neutral – at least until we become activation syndrome junkies – e.g., joggers. Perhaps the activation syndrome also has some low level of unconditioned reward value attached to it. Yet, that reward value might be overshadowed by the learned aversive or reward value when it's paired with stimuli that cause us to use the label "emotion." We're not saying much that general psychologists would disagree with, but this analysis seems to add a slightly new dimension to the whole problem, fitting within our behavioristic framework in a manner that may make the problem slightly clearer.

■22 Cite an instance of where the activation syndrome serves as a reward and another instance where it serves as an aversive.

chapter 3
stopping behavioral procedures

INTRODUCTION

In the last chapter we saw how to form the basic behavioral proce-
dures: the reinforcement, punishment, and avoidance procedures. In
this chapter, we'll look at how we can stop those basic procedures
and what happens to the acts involved when they do. Also, we'll look
at the patterning of effects in relation to acts, whether they are con-
sistent or intermittent, and how such relationships influence the stop-
ping of basic procedures. Finally, we'll see how learned rewards and
aversives can lose control of the acts they follow and take a brief look
at what behavioral chains and behavioral histories are.

STOPPING BEHAVIORAL PROCEDURES

So far we've learned about the types of behavioral procedures. We can present rewards or aversives, and we can take them away. And we can prevent the occurrence of an aversive and the loss of a reward. But what happens when a contingency relationship stops, when effects no longer follow actions? The likelihood of the act changes. And the way it changes depends on the type of procedure that was once in effect. Actions decrease in frequency when we stop the effects of reinforcement and avoidance procedures. But acts suppressed by punishment procedures increase in likelihood when the procedure stops. When actions no longer produce their usual effects we say the behavioral procedure is stopping.

Stopping behavioral procedures: the withholding of the usual effects for an act causing the likelihood of the act to change.

- ▪ 1 State how we can stop behavioral procedures.

STOPPING REINFORCEMENT PROCEDURES

Let's look at an instance of the stopping of a behavioral procedure, a reinforcement procedure based on rewards. Suppose you like coffee and that you sometimes even stoop to getting your caffeine rush from a vending machine. Usually you stick your money in the slot, and that action results in a cup of coffee — the reward. But what if the machine stops producing coffee, if your paper cup remains empty even after you've spent too much hard-earned cash feeding the machine? Chances are you'd stop trying. Your act would become less likely due to the breaking of the behavioral contingency relationship between putting money in the machine and getting a cup of coffee.

Again, what type of effect controls the act of feeding a vending machine? A presentation of a reward — a reinforcement procedure. So we could have guessed that withholding the coffee would make this act less likely, causing it to stop, because actions decrease in likelihood when we stop a reinforcement procedure. Acts also decrease in likelihood when we stop removing an aversive, since removing an

aversive is the second kind of reinforcement procedure. For instance, suppose the people in the apartment next to yours had a stereo blaring louder than you could stand. You'd ask them to turn it down, and they probably would. So your act (asking) removed the aversive (blaring stereo). But if they didn't turn down the stereo when you asked them to, you'd eventually stop asking. You might pound on the wall or call the police, but the act of asking would stop occurring since asking failed to remove the aversive.

Stopping a reinforcement procedure (extinction): an operation that decreases the likelihood of an act, either through stopping the normal presentation of a reward or by stopping the normal removal of an aversive.

You'll note that we call the stopping of a reinforcement procedure extinction. Extinction means that acts maintained by reinforcement procedures will become less likely, or extinguish, which means "to cease," when their effects stop.

- 2 State how each of the two reinforcement procedures can be stopped. What happens to the likelihood of the act after the procedure breaks?

STOPPING PUNISHMENT PROCEDURES

Like reinforcement procedures, punishment procedures will break down when the behavioral effect maintaining them stops occurring. So what would happen if we withhold the aversive in a punishment procedure? Punishment procedures suppress (stop by force) acts, so when we withhold their effects, the suppressed (stopped) acts increase in likelihood.[1]

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[1] Note: it's very possible for a punishment procedure to be so strong that the act it involved simply won't occur again, thus never making contact with the new situation. For our purposes, we won't deal with this here, but will wait until later in the text.

Now, let's look at an instance of stopping a punishment proce-
dure, based on aversives. You open the oven door and peek inside.
Oh no! All that time you spent, and there sits your crab casserole
looking like the slimy side of a beach rock — an aversive sight after
all of your hard work. You take a taste: Humm, it tastes all right, but
you'd never dare to serve it; it looks too bad. Another episode in
your career as a gourmet cook, turning out much like the ones before
it. Your food never looks like the TV expert's. So lately you've been
trying fewer and fewer gourmet dishes.

But one day Graham's cheese souffle' looks so good and so easy,
you just can't resist trying it. You grate, blend and stir. Then, an hour
later, you take a cautious peek at your creation. Voila! It's beautiful.
And after your big success you begin cooking more and more. Why?
Because the punishment procedure once in effect stopped. Aversives
first followed your cooking attempts — the disgusting sight of the
food you made. But your cheese souffle' stopped the punishment
procedure. And the arbitrary response class, gourmet cooking, began
to increase in likelihood, because the punishment procedure stopped.

The removal of a reward following an act is also a punishment
procedure. And that procedure stops when the act no longer removes
the reward, making the act once weakened by that procedure more
likely. For instance, you and your date have just spent another even-
ing together, talking, laughing, having a great time. But now your
date has left for the other side of the room, pretending to adjust the
stereo knob. And you sit on the couch, feeling unloved. You blew it
again. Everytime you bring up the subject of how much you care for
your date, the same thing happens — you suddenly find yourself
alone.

Still, later in the week, you decide to give it one more try, against
your better judgment. And to your surprise you feel a gentle hand on
your arm; you look up to see your date's eyes ready to meet yours.
No more rejection. After that, you begin speaking out more and more.

When you first started going out, you would tell your date you
cared, and that act would produce the loss of a reward. (Your date
would leave.) But this punishment procedure stopped when your

date no longer moved away from you, causing your act of saying you cared to increase in likelihood.

Stopping a punishment procedure: an operation that increases the likelihood of an act, either through stopping the normal presentation of an aversive or by stopping the normal removal of a reward.

- 3 State how each of the two punishment procedures can be broken. What happens to the likelihood of the act after the procedure breaks?

STOPPING AVOIDANCE PROCEDURES

We can also stop avoidance procedures by withholding their effects. You'll recall avoidance acts either prevent the loss of a reward or the occurrence of an aversive. Stopping the procedure, then, involves taking away the effects for these acts, either preventing the removal of a reward or the presentation of an aversive. The act that once prevented the loss of a reward will no longer prevent its loss; the reward is removed in spite of the avoidance act. And the act that once prevented the occurrence of an aversive will no longer do so; the aversive occurs in spite of the avoidance act. And since these acts aren't effective anymore, they begin to decrease in likelihood.

Let's look at two cases of the stopping of avoidance procedures, first with an act that prevents the removal of a reward. "I'm disappointed in you," your father says. "I told you I'd take your car away if you didn't mow the lawn twice a week. And you haven't mowed it since last week. I'm afraid you can't use your car tonight."

"But Dad," you argue, "lately, every time I mow the lawn the way we agreed, you still find 10 reasons why I can't use my car. You didn't hold to your end of the deal."

Can you see the avoidance procedure that was in effect? At first, if you mowed the lawn (act) you would prevent the removal (contingency relationship) of the car (reward). But after a while, mowing the lawn (act) no longer prevented the removal of the car (stopping of

contingency relationship). So, your act of mowing the lawn stopped when the avoidance procedure maintaining it also stopped; your act extinguished.

Avoidance procedures based on the removal of rewards are stopped when an act no longer prevents the reward's removal as we'll see in our next example.

"Why are you so depressed?" your friend asks, as you sit slumped in your chair, staring into space.

"I got a 'D' in chemistry," you answer.

"How come?"

"Well, our class had these weekly quizzes, and I started off studying really hard for them. But I got bad grades on them anyway — 'C's' and 'D's.' After a while I just gave up. That class was so hard studying didn't do any good."

Part of the reason we study is to prevent (contingency relationship) a bad grade — an aversive. But if studying doesn't prevent the bad grades, studying, as an avoidance act, will become less likely. It will extinguish.

Stopping an avoidance procedure: an operation that decreases the likelihood of an act, either through stopping the normal prevention of an aversive or by stopping the normal prevention of a loss of a reward.

- 4 State how each of the two avoidance procedures can be broken. What happens to the likelihood of the act after the procedure breaks?

EXTINCTION OF REWARDED ACTS VERSUS PUNISHMENT BY REMOVAL OF A REWARD

In chapter 2, we studied reinforcement, punishment and avoidance procedures. In this chapter we talked about how these procedures can break down — by withholding their effects. People often mistake punishment by the withdrawal of a reward for extinction of acts that

once produced rewards. Let's see how these concepts differ.

Extinction of rewarded acts involves the stopping of a reinforcement procedure. An act that once produced (contingency relationship) a reward no longer produces that reward (breaking of the procedure — extinction). Remember the coffee machine example we used earlier? Putting a quarter in the machine (act) once produced (contingency relationship) a cup of coffee (reward); a reinforcement procedure maintained the act. But now the act no longer produces that coffee (breaking of the procedure — extinction).

Removing a reward involves forming a punishment procedure. An act produces the withdrawal (contingency relationship) of a reward (punishment procedure). When a child eats too much candy her mother may take the candy away from her. Eating candy (act) causes her mother to remove (contingency relationship) the candy (reward), and this is a punishment procedure.

The outcomes of both these procedures are the same — they both make acts less likely. But the operations themselves differ. An act **fails to produce its usual reward** in the extinction procedure, while an act **causes a reward to be removed** in the punishment procedure. Let's look at another instance of both procedures.

A constant complainer, Dave was always talking about the raw deal he had gotten from someone. At first his friends followed his complaining with sympathy ("Oh, that's too bad."). And Dave kept complaining. Later, his girlfriend got tired of listening to him. So she withheld the sympathetic statements she had once given freely when Dave complained. She was using extinction. Complaining (act) that once produced (contingency relationship) sympathy (reward) no longer produced that reward (stopping of a reinforcement procedure — extinction). After a while Dave stopped complaining to his girlfriend.

Some of his other friends weren't so kind. They'd walk right out of the room when Dave started complaining. This is a punishment procedure. Complaining (act) caused the loss (contingency relationship) of his friends' presence (reward). Both Dave's girlfriend and his other friends weakened the act of complaining. His girlfriend did so by not following those acts with the rewards they once produced (extinction). His friends did so by removing all access to themselves as rewards when Dave complained (punishment procedure).

Let's now look at one more instance showing how the removal of a reward differs from the extinction of an act that once produced a reward. Robert was an Italian exchange student starting his first semester at NYU. Never having visited this country before, Robert asked his roommate to tell him a good, cheap place to eat and drink. His roommate suggested Aunt Hattie's Bar and Grill. After finishing his dinner at Aunt Hattie's, Robert settled back to watch the other people in the small, crowded room. Seeing his waitress nearby, he decided to order some wine.

"Vino please," he said, waving his hand. The waitress passed his table without looking up. A little while later she began clearing the table next to his.

"Signora, VINO please." The waitress continued her work as if she hadn't heard him. After a few more unsuccessful trys to get wine, Robert paid his check and left Aunt Hattie's.

Can you see how this is an instance of extinction? The waitress didn't understand Robert's request, and so the request for wine didn't produce its usual effect − a glass of wine. So the act of asking for wine extinguished since it didn't produce the reward. Asking (act) that once produced (contingency relationship) wine (reward) no longer produced (stopping of a procedure − extinction) that reward.

How could you change the above example to show a punishment procedure based on the removal of a reward? Well, the waitress would have to remove a reward following Robert's request:

"Vino please."

"You foreigners can't talk dirty to me and get away with it!" the waitress thought as she picked up Robert's dessert and threw it on the floor.

This is a punishment procedure (even if it's a mite farfetched). Asking for wine (act) resulted in the removal (contingency relationship) of Robert's dessert (reward). The act of asking for wine will most likely decrease.

- 5 State how extinction of acts that produce rewards differs from a punishment procedure where an act causes the removal of a reward.

- 6 State how extinction of acts that produce rewards differs from a punishment procedure where an act causes the removal of a reward.
- 7 Give an instance of the extinction of an act that once produced a reward, and be able to change the example you just gave to illustrate a punishment procedure where a reward is removed.

INTERMITTENT EFFECTS
AND STOPPING BEHAVIORAL PROCEDURES

Certain acts occur time after time without producing any behavioral effects. How many times have you fruitlessly checked the coin return slot on the pay phone after finding a quarter in it on a few, widely spaced occasions? And how many times have you banged on your TV set when the picture is going heywire, even though that act has only produced a better picture now and then? Acts like these are said to have **intermittent effects** — they only produce effects once in a while.

Intermittent effects: effects that only follow an act sometimes.

Other actions — most actions, in fact — produce **consistent effects.** The phone rings, you pick it up, and there's almost always someone on the line. Consistent effects. You walk into a room, flip the light switch, and the lights almost always come on. Again, consistent effects.

Consistent effects: effects that follow an act almost every time the act occurs.

Now, what happens when a behavioral procedure stops? Well, that depends on whether the procedure involved consistent or intermittent effects. Suppose intermittent effects were involved. Then for a fairly long time, you will keep on acting as if the procedure were still in effect, even though it has stopped. And what if the procedure involved

consistent effects? Then, shortly after it stops, you will stop acting as if that procedure were still in effect.

You might keep on checking Ma Bell's coin slots for quite a while even if Ma had somehow found a way to make sure you never got another quarter from her in that fashion. That's because the act once produced intermittent effects. Now, even though the reinforcement procedure has stopped, you behave as if it hasn't, at least for a fairly long time. The same thing is true of knocking your TV set when the picture goes fuzzy. Even if the designers made the set in a way that your act couldn't produce a clearer picture, you'd keep on banging away, because in the past that act paid off now and then. But this isn't to say that you'll never stop checking for quarters or violating your TV once the procedures maintaining those acts stop. Those acts will stop occurring; it will simply take a long time.

But what about answering the phone and flipping on the light switch? Remember, acts that produce consistent effects will quickly lose control over the acts they maintain when the procedure stops. So you will soon stop picking up the phone if nobody is ever on the other end. And you won't waste too much time flipping the light switch if the light fails to come on.

- 8 Define intermittent effects and cite an instance of an act that has intermittent effects.
- 9 Define consistent effects, and cite an instance of an act that has consistent effects.
- 10 State the kind of effects that cause a behavioral procedure to **slowly** lose control of the acts it once maintained after that procedure stops.

HOW LEARNED REWARDS AND AVERSIVES
LOSE CONTROL OVER ACTIONS

We've seen how acts change when the procedure that maintains them stops. But the learned rewards and aversives themselves can also lose control of the acts they follow. How? Well, remember that many re-

wards and aversives gain their power over our actions because of their pairings with other rewards and aversives, both learned and unlearned. Money, for instance, is a strong learned reward, gaining its rewarding power because of the many rewards paired with it. But what if money stopped being paired with other rewards? Its rewarding power would stop too.

Confederate currency was a strong reward for Southerners during the Civil War. But when the South lost the war, their currency could no longer buy rewards like food and clothing. It became worthless; it no longer increased the likelihood of acts it followed — like working for it. In other words, that currency lost its control as a reward. If a learned reward doesn't sometimes make contact with other rewards, its power to control our actions will stop; the reward will no longer support our actions.

Loss of behavioral control by a learned reward: a stimulus that once served as a reward loses its power to increase the likelihood of acts since it is no longer paired with other rewards.

Loss of behavioral control by a learned aversive: a stimulus that once served as an aversive loses its power to decrease the likelihood of acts since it is no longer paired with other aversives.

Freddy was 26 years old. And he had lived at Green Briar Institute for the mentally retarded for the last eight years.

Susan, a new therapist at Green Briar, decided to work with Freddy's table manners, since he ate most of his food with his hands, refusing to use forks and spoons. She began sitting with Freddy at mealtime, and whenever he picked up food with his hands she would tell him "no." And to back up the "no," Susan sometimes also removed Freddy's plate for a minute or so following an act of picking up food with his fingers. Her punishment procedure worked well, for soon Freddy was eating most of his food with a fork or spoon. But then another staff member told her she wasn't supposed to remove Freddy's plate, even for a minute or two, saying such procedures were against the rules of Green Briar. So after that Susan only used

"no" when Freddy ate food with his hands. And after a time, Freddy again began to eat more and more food that way. The word "no" was losing its power as an aversive, since it wasn't ever paired with other aversives, like the removal of food.

So, again, if learned rewards or learned aversives are to affect acts, they must be paired with other rewards or aversives now and then.

■11 State how learned rewards lose control of the acts they follow.
■12 State how learned aversives lose control of the acts they follow.

BEHAVIORAL CHAINS

The constraints of our physical and social worlds often require us to complete a number of acts in a certain order before the last one produces a final effect. Good bank robbers must walk through the bank's door, tell the clerks to lie down on the floor, and ask the manager to open the safe — all before they get any money. And they wouldn't get the final reward if they did these things in the wrong order. The clerks, for instance, wouldn't lie down on the floor if the robbers made that request while they were still outside on the sidewalk. And what if they asked to have the safe opened before the clerks were safe on the floor? Oops, Harold Heroic is disarming them with more than a smile. Close, but no cigars.

So you can see why we complete some acts before others — we have to if any of the acts are to produce an effect. As the old saying goes, you can't bake a cake without breaking some eggs (or turning on the oven, or greasing the cake pan, or stirring the batter . . .). These strings of acts, all tied together, are **behavioral chains.**

Behavioral chain: a series of acts that must be completed in a certain order before a final effect can occur.

In a behavioral chain each act sets the occasion, or causes, the next, which causes the next, and so on, until the final act produces a final effect. For instance, the teacher says to her first grade class, "Count to ten."

"One, two, three, four, five, six, seven, eight, nine, ten," the class calls back.

"Very good," she responds.

Counting is a behavioral chain, because the responses must be made in a certain order before the last one produces a reward. And each act in the chain sets the occasion for the next: "one" sets the occasion for the response "two," which sets the occasion for the response "three," and so on, though the number that is being "counted to" is the only one that pays off directly, even though all the rest of the acts in the chain are made more likely when the reward occurs.

The effect produced by the last act in a chain, the final effect, causes each act in the chain to become a learned reward or aversive (depending, of course, on the nature of the final effect). This happens because all of the acts are indirectly paired with the final effect, and they all increase in likelihood if the final effect is either a reinforcement or avoidance effect. Or, they all decrease in likelihood if the final effect is a punishment effect. And the acts in the chain most affected by the final effect are those near the end, those closest in time to the final effect. The further the acts in the chain from the final effect, the less of a learned reward or aversive those acts will be.

Sharon, a therapist, taught Rick, an 11-year-old retarded child to wash his hands following meals and snacks. She broke hand-washing into four acts that together formed a behavioral chain: a) sticking his hands in the water; b) putting soap on his hands; c) rinsing his hands; and finally, d) drying them. When Rick finished all these acts in the right order, Sharon played Rick's favorite ring toss game with him (the reward).

Then Sharon left for a new job. So the reinforcement stopped, since a reward no longer followed the behavioral chain – and Rick's acts began to extinguish. The new therapist observed Rick rinsing and drying his hands, but not first wetting them and using soap. It's likely this is because the reward more closely followed the final acts of the chain – rinsing and drying. And the closer the reward to an act, the more the reward will control the act. But if no new rewards for hand-washing occur, all the acts of the chain will stop over a period of time.

We get most of our rewards through chains of acts. In order to get a drink of water, we must walk to the kitchen, find a glass, hold the glass under the faucet, turn on the water, fill the glass, turn off the water, and raise the glass to our lips. In order to watch our favorite TV show, we must check the time, making sure the show is on, then, if the time is right, we must walk to the set, turn it on, and select the channel.

■13 Define a behavioral chain and cite two instances of chains.
■14 In a behavioral chain each act _____ the next act.
■15 State what happens to the acts in the chain if the final act produces either a reinforcement or avoidance effect.

BEHAVIORAL HISTORIES

Look, there's Betty Bright, reading aloud to her class. And she's a good reader, the best in her first-grade class, according to the teacher.

". . . I cannot find the two boats. I cannot find my red ball. Where is my red ball? Where is my yellow boat? Where is my blue boat? Where, oh, where?"

"Betty," says her teacher, "that was a very good job. You pronounced every word right, never stumbled once. All right, Sammy Slow, why don't you stand up and start where Betty left off."

"Jane sss . . ."

"The word is 'said,' Sammy." The teacher frowns slightly.

"Oh! Jane said, 'I can . . . hhh . . .'" Sammy looks up at the teacher. "H-e-l-p?" he spells out slowly.

"The word is 'help,' Sammy. We learned it almost two weeks ago, don't you remember? Now please, start again."

"Jane ss-said, 'I can **help** you. I can . . . fff . . .' Uhm, I don't know that word."

"Sound it out, Sammy," the teacher says, seeming to grow a little impatient with Sammy's slow, stuttering progress.

"All right. Ffffi-nd . . . fffind. Oh! Find! 'I can **find** two boats for you.'"

"Er, uhm, thank you, Sammy. That's enough for now — you can sit down."

    ★   ★   ★

Now Betty is at home with Mom and Dad, looking bored. "Mom, what can I do?"

"Read a book, Betty. Grandma sent you a new one — it's sitting on the kitchen table," her mother says.

"Do I have to?"

"Well, yes, I think you should. Then later, you can tell Dad and me all about it. Now get going."

    ★   ★   ★

And there's Sammy Slow. He's at home now, too: "Hey, Mom, what does this say," he asks, waving the cereal box in the air.

"It says there's a prize in the package."

"Oh. Well, what does it say here?"

"Just some stuff about preservatives. Sammy, please don't bother me now, dear, I've got to get ready for a meeting. Why don't you go upstairs and watch the cartoons on TV."

    ★   ★   ★

For Betty, reading is an act that produces strengthening effects. Her teacher praises her because she is a good reader. Her parents encourage her to amuse herself by reading at home. And she herself likes to read because of the stories she comes into contact with. But with Sammy Slow, things are much different. He doesn't read well, so reading doesn't get the teacher's praise. His parents encourage him to watch television and play outside rather than to curl up with a book. And when Sammy tires to read on his own, he gets few rewards, since he knows so few written words. So the behavior of trying to read begins to extinguish.

Poor Sammy. At the ripe age of six, he's fallen into a trap that could hold him the rest of his school days and maybe even longer. For Sammy, the act of reading doesn't produce enough rewards to maintain it. So Sammy doesn't read. But by not reading, that be-

havior will never produce the effects needed to maintain it. And because Sammy can't read now, he may well fall even further behind the kids in his class, since he won't be able to follow written instructions from the teacher, from workbooks, from textbooks and so on.

Betty Bright and Sammy Slow each have a behavioral history for reading, a history that is a summation of:

1. The kinds of effects an act has produced when that act occurred (reinforcement, punishment, avoidance, or none of these).
2. The closeness of the effects to the acts (only effects closely following acts are likely to influence them).
3. The size, or magnitude, of the effects.

Behavioral history: a summation of the kinds of behavioral effects an act has produced, the closeness of those effects to the acts, and the size, or magnitude, of those effects.

We'll never be able to know a person's complete behavioral history for a class of acts since we can't observe or measure many of the factors involved. But the concept can still help us. We can often make good guesses as to a person's behavioral history based on what we can observe of the acts we're interested in:

1. How often the acts occur.
2. The conditions under which they occur.
3. The size, or magnitude, of the effects.

There are two related reasons why we would want to know about behavioral histories: **to explain why people act as they do and to predict what they'll do in the future.** A rule of thumb is that people will keep on acting the way they act now — unless the effects of their actions change. So we would predict that Betty Bright will continue to be a good reader, unless the reinforcement and avoidance procedures that maintain reading stop. We'd also predict that Sammy Slow will continue to be a poor reader and student, unless somebody steps in with some reinforcement and avoidance procedures to develop and maintain his acts.

■16 What is likely to happen to acts when effects closely follow them?

■17 Define behavioral history by stating the three factors that it's made up of.

■18 Can we ever know a person's complete behavioral history? Why or why not?

■19 How can we guess what a person's behavioral history is (three parts to this answer)?

■20 State two reasons why we might like to know someone's behavioral history.

■21 State the rule of thumb for predicting future actions.

CONCLUSIONS

In the last chapter we saw how we can form behavioral procedures. In this chapter we looked at how we can also stop these behavioral procedures — by withholding the effects that acts usually produce. The likelihood of an act changes when this happens, and the direction of change depends on the procedure once involved. Acts decrease in likelihood when reinforcement and avoidance procedures stop, but they increase in likelihood when punishment procedures stop.

In this chapter, we also looked at intermittent and consistent effects, seeing how they interact with the stopping of behavioral procedures, and behavior chains, series of acts that must occur in a certain order before a final effect can occur. Finally, we saw how learned rewards and aversives can lose control of the acts they follow — by no longer being paired with other rewards and aversives, and how using the notion of a behavioral history, we can begin to explain and predict acts.

chapter 4
looking at behavior in terms of its effects
terms of its effects

INTRODUCTION

"You psychologists make me nervous. You're always trying to analyze everything I do — always trying to figure me out." If you haven't heard that one yet, you will, as more people learn you're studying psychology. For many years, I answered that I really hadn't spent much time trying to figure people out. Not that I didn't care about them -- behavior analysis just didn't seem too helpful in looking at most people's everyday actions. Of course, we knew that, in theory, we might understand all our actions in terms of behavior analysis, but that was still more a matter of faith than proven fact. In recent

years, however, more and more behavior analysts have become more and more skilled at looking at the world in terms of behavior analysis. And as we develop these skills, we have to answer, "Yes I was trying to figure out why you were doing that."

It's very rewarding to be able to understand why you and your friends do what you do, why you are the way you are. It's very rewarding to have a way of looking at life that can play a major role in helping you understand it. And this chapter, as well as the next, is geared toward helping you acquire those rewards — helping you master those complex and subtle skills of behavior analysis so that you can understand your own personal life, as well as your professional life. Therefore, the purpose of this chapter is twofold:

1. To try to show that behavior analysis is powerful enough and general enough to help you answer nearly any question you have about human behavior — commonplace or unusual.
2. To help you master the basic concepts of behavior analysis covered thus far, to a level where you can develop a plausible analysis of most any human action you encounter.

CONTROL OF CONVERSATION BY SOCIAL REWARDS

The "Terry-Southern Effect" involves using shocking language around those persons who are sure to react to it — a behavior to which I must confess guilt. Why do I (and a few of my brothers and sisters) behave in such a bizarre way? Because of our behavioral histories for doing so. Because of the behavioral effects those acts have produced. But what are they? Other people blush, or make a big act of ignoring my behavior, or giggle, or say, "Oh, how nasty!" or all of the above. Such reactions are rewarding enough to maintain this junior-high behavior even in fairly cultured (though warped) adults. Yes, such reactions are strong social rewards of perhaps the most basic form: recognition. They responded to me; they acknowledged that I exist! We'll meet this treacherous form of reward many times in the future, since what is meant to be a mild social aversive often involves rewarding

acknowledgement of the person and the person's behavior. And this attention turns out to be much more of a reward than an aversive. In fact, we react with some alarm when we meet up with another having as big a garbage mouth as ours, since after a little probing, the new person makes it quite clear that nothing we say will get the shocked expression we find so rewarding.

By the way, people seem to grow used to any specific level of grossness and stop giving any special reaction. Of course, without their rewarding attention, we warped people stop saying those particular gross things. But usually that doesn't stop our grossness for good; it merely sinks to a lower, baser level, going deeper and deeper until the victim is once again squirming, embarrassed.

I have one friend who suffers embarrassment more for me than by me. She feels sorry that my actions have become so debased and juvenile. It hurts her that I'm controlled by such cheap rewards. So my good friend firmly, but without a fuss, ignores any grossness on my part, treating such talk as if it were normal verbal behavior rather than the earsore it is. Withholding that precious (but cheap) reward, her shocked attention, has resulted in my gross talk decreasing to a level only slightly above normal in her presence.

— A true friend is one who withholds even our most cherished rewards, if need be, to prevent us from making complete asses of ourselves.

Many other forms of bizarre speech also fit dirty word dynamics. For instance, the Don-Rickles Effect — the cutting, biting put-down that leaves your victim bleeding and your audience laughing. At one time or another, most of us have fallen prey to the ridicule of a drawing-room Don Rickles. And once in a while many of us even play the Rickles role ourselves, trapped by the social rewards for such anti-social acts.

I know one woman so hooked by the social rewards for her Rickles act that it pervades her entire life to the point where she has almost no friends. Few dare brave her sarcasm. Even as you laugh while she is cutting up one victim, you start getting anxious, since you might be the next. But you can't ignore her act; you must reward it by paying attention to it and even laughing at it, as she's a very clever and

You're so ugly I'd have to tie a pork chop around your neck to get the dog to play with you!
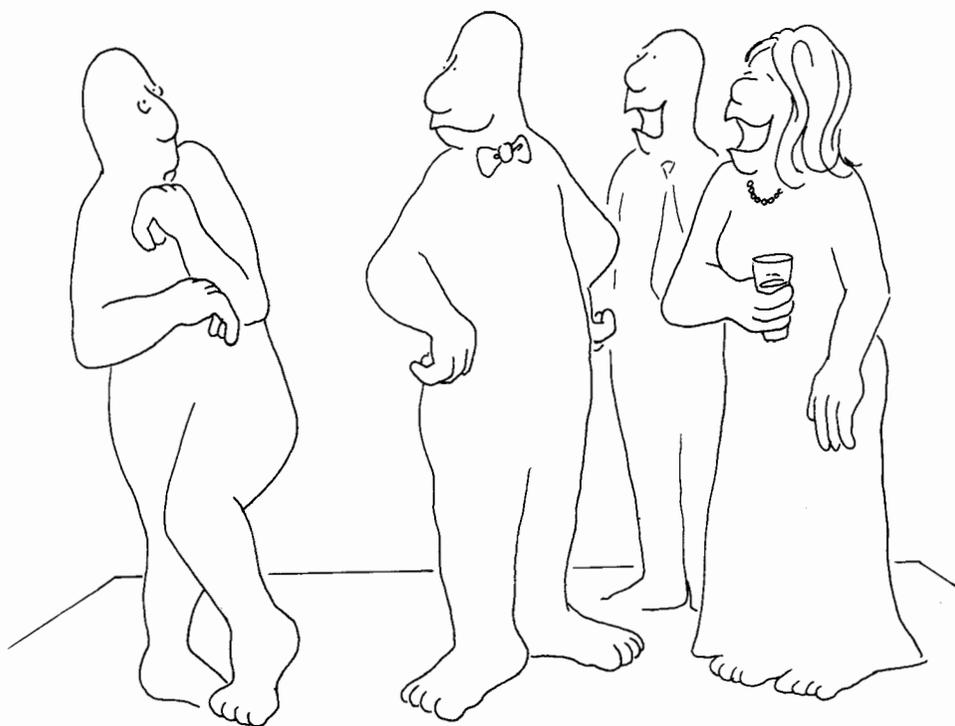
witty woman. And because you can't ignore it, that act occurs more and more often, pushing out more pleasant but less flashy forms of social exchange. Many people lead much less effective lives because they're locked into one form or another of the Rickles role — trapped by those deceptive social rewards.

Many other variations of the Terry Southern Effect also manage to cause problems in peoples' lives, causing them to talk in ways that reduce their overall effectiveness. They may find themselves programmed into making statements of an extreme nature, because such statements are sure to get a reaction.

Self-effacement also results from this sort of programming:

"I don't know why I can't do anything right." (act)

"You're too hard on yourself; you do all sorts of great things." (reward)

"I don't think so." (more act)

"Come on now, you're really great." (more reward)

But after a while, the sources of the social rewards go away because they find it too aversive to spend so much time listening to the complaints.

- 1 Why do some people go out of their way to use foul language around others who do not seem to find it rewarding?
- 2 Thought question: If you were a victim of such a person, how would you get rid of that aversive behavior?
- 3 Describe the Don-Rickles Effect. Why does it occur? What are its bad side effects?
- 4 Explain how people can get hooked on self-effacement.

PHYSICAL EXERCISE, SOCIAL REWARDS AND THE ACTIVATION SYNDROME

I used to argue that physical exercise, like jogging, wasn't worth the effort. I wouldn't squander my time in such a vain attempt to prolong my life. I thought a life lengthened by such aversive efforts was not worth it. The aversive results of exercise seemed too great. But
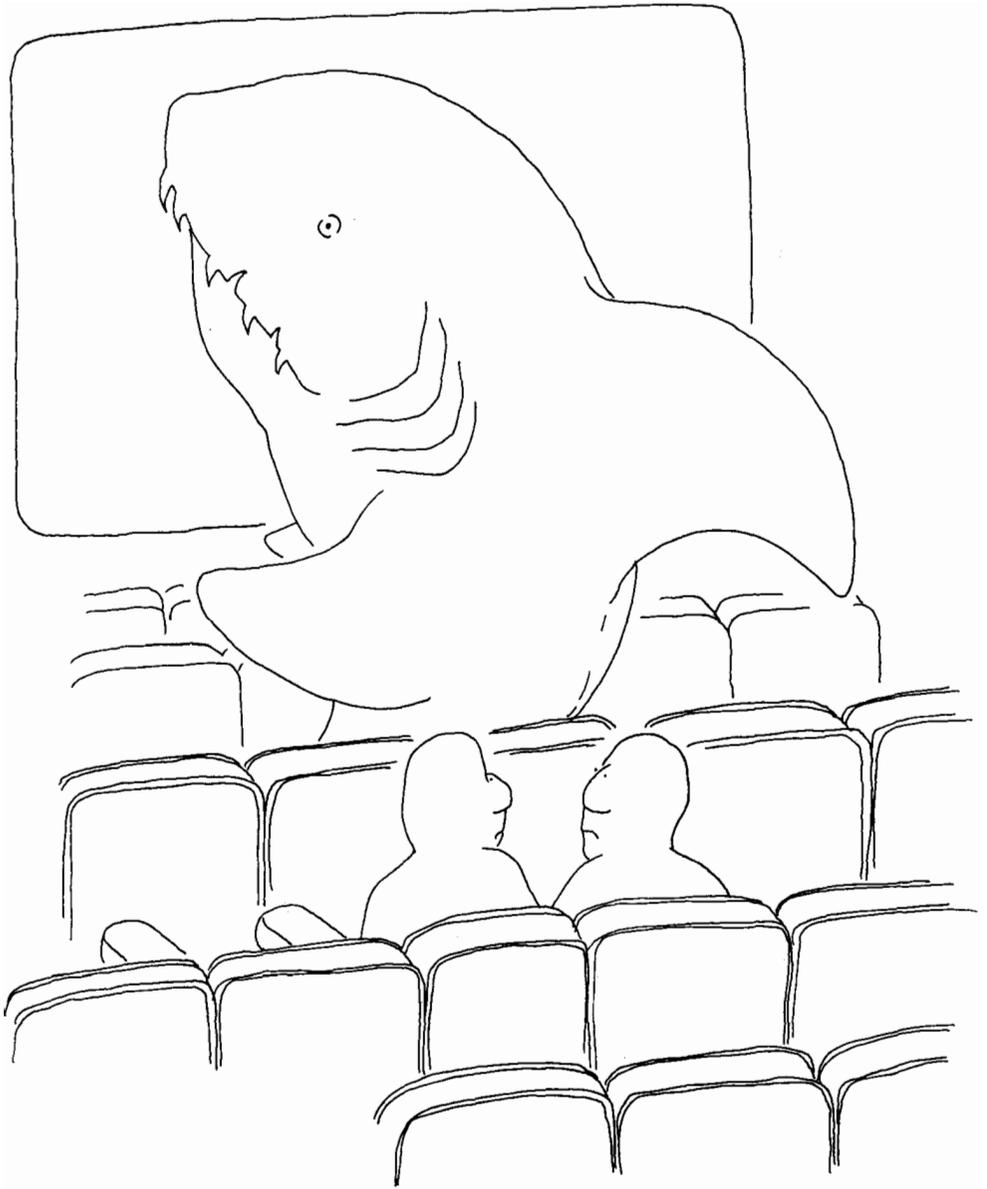
I just wish he'd stop applauding whenever someone gets eaten!

finally, I did start an exercise program. I began riding an exercise bike and ended up running a few miles each day. At first I thought social rewards were the main factors helping people succeed in keeping up an exercise program. I noticed, for instance, that many joggers managed to call other people's attention to their spartan life, getting a few "oohs" and "ahhs" as rewards. I also noticed that joggers often ran with other people, showing that some sort of social reward might be helping them stick with it.

I believe that such social rewards play a vital role in the early stages of a jogging program, and it may also be fairly crucial later on; yet, I've also come to believe that an unlearned reward also comes into play as people spend more and more time exercising. That reward is the "activation syndrome" — a physiological response pattern involving increased heart rate, increased breathing rate, etc. A physiological rush.

- 5 Cite an instance of physical exercise being made more likely primarily by social rewards.
- 6 What unlearned reward may also increase the likelihood of exercise behaviors?

JAWS: AN UNLEARNED REWARD

This physiological rush, the activation syndrome, may be an unlearned reward in many places. For instance, think about the movie, *Jaws*. Why have millions of people paid millions of dollars and waited in line for hours only to be frightened half to death? Because something about past experiences like that were no doubt rewarding. And we're proposing that part of the reward is the activation syndrome.

In *Jaws* it begins building the instant you see the lovely girl, a child of nature, tripping gayly into the dark blue water. Her body, silhouetted against the moon (picked up by a beautiful underwater shot from below) as she waits in sweet maidenly innocence for *Jaws!* We see it coming and the activation syndrome starts. We can't stop it. We just sit there white-knuckling it, as our hearts race on at 130

beats per second until the very end when Richard Dreyfuss and Roy Sneider drift back to safety, having delivered mankind from the jaws of *Jaws*.

- 7 Cite an **original** instance where the activation syndrome is an unlearned reward for behaviors other than physical exercise.

FAILURE: A LEARNED CONDITIONAL AVERSIVE

I avoided starting an exercise program because of the aversives for hard exercise produces — tired lungs and aching muscles, to name a few. But another factor also controlled staying away from such a program — the chance of failure — a big aversive for many of us. The way to hell is lined with closets full of unused athletic equipment. Most people who start to exercise don't stay with it; they cop out; they fail. And since I find copping out so aversive, I'm slow to begin something I might not finish. I suspect copping out is a learned aversive, because of the answers to four questions. These four questions often help us decide whether some reward or aversive is learned or unlearned.

First, are the actions of other species controlled by those same rewards or aversives? If a reward or aversive seems to be fairly universal among many species, it's very likely that a basic, unlearned, biological process is involved. But we have a hard time imaging a lower animal being controlled in any way by the success or failure of completing a new task.

Second, if these rewards or aversives don't affect other species, do they affect the actions of all members of our species? If a reward or aversive is universal within our species, we may suspect that there is some unlearned biological process involved, although there's always the chance that our human world is so uniform that we all acquire that same learned reward or aversive. But it seems like failure is only slightly aversive or not at all aversive for some people. This is especially true for youngsters before they have acquired speech and begun to come under much control by their culture.

Third, can we think of a biological basis for the reward or aver-

sive to be classified as unlearned? We can understand something about the reward of food and the aversive of pain, in terms of our physiology. Food helps us maintain our body cells, whereas pain usually accompanies something harmful to our cells. But we don't seem to have a physiological basis for failure as an aversive effective across a wide range of settings.

And fourth, can we think of ways in which the reward or aversive could have gotten its learned power? Yes. Failure is often paired with social aversives, like criticism. It may also be paired with the loss of rewards. In fact, we not only think failure could become a learned aversive, we'd be surprised if it didn't.

These four questions will help you decide whether a reward or aversive is learned or unlearned, though they give you no guarantee that you'll always come up with the right answer. You should always be ready for new evidence that contradicts what you had decided.

So we've concluded that failure is a learned aversive, but only at certain times is it a strong learned aversive. In other words, it's a conditional aversive. For instance, I don't mind failing if I've done as good a job, if not better, than anyone could expect, if my failure was due to events beyond my control, or if the task turned out to be one no human could perform. Under those conditions, failure hardly seems bad. Again, this feature of failure seems to be the result of a learned aversive, and is probably based on its social results. In other words, at certain times we disapprove of people who fail to accomplish their goals, while at other times, we may actually approve of them for attempting such an heroic task. But to fail without really trying — ah, that's the disgrace. That's aversive.

- 8 List the four questions which are helpful in deciding whether a behavioral effect is learned or unlearned.
- 9 If the actions of many species are controlled by a specific reward or aversive, it's likely that the reward or aversive is _____ (learned, unlearned).
- 10 If a reward or aversive is universal within our species, it's again likely that that reward or aversive is _____ (learned, unlearned).

■11 Analyze failure as a learned/unlearned reward or aversive, using the four questions mentioned in the first objective in this section.

■12 Under what three conditions may failure **not** be considered aversive.

SELF-INJURY BY INSTITUTIONALIZED CHILDREN: UNLEARNED REWARDS

Suppose you walk into a residential treatment center for the retarded. You notice one little boy sitting in the nursery, his arms tied to his sides, his eyes staring blankly toward the TV set. You ask the attendant why he's tied up, and the attendant replies, "If we untie Johnny, he starts banging his head with his fists until his ears bleed." You find that hard to believe but would decline an offer by the attendant to remove the child's bindings in case you're wrong.

Bizarre behavior, you think. But on telling the story to your psychology teacher, you find it's not that rare. Almost all large institutions for retarded and psychotic children have a few people like Johnny. Such children are uncommon but not that uncommon. And their form of self-abuse varies slightly. Some bang their heads on the concrete floor until their skulls become misshapen. Others bite their fingers or arms or shoulders until they're bitten to the bone. Others pound their faces with their fists until they've damaged their eyes beyond repair.

Why would they do these horrible things to themselves? Well, first we must realize that we're dealing with behavior, with actions — Johnny is doing something — hitting, pounding, biting. Second, we must recall the most fundamental law of behavior analysis: the Law of Effect. The results of our actions determine whether we repeat those actions in the future. So we conclude that head-pounding must be increasing the contact Johnny is making with some sort of rewarding event.

Let's think about possible rewards. There are two general types of rewards — unlearned and learned. At first glance, we have a hard time thinking of any unlearned reward self-injury might produce.

Then we look around the ward at some of the other retarded children. One little girl sits in a stationary chair, rocking back and forth. A little boy twists his hands back and forth constantly, opening and closing them, pushing them together and separating them.

All of this is behavior, but at first we're inclined to say that it's behavior that "just happens." And pushed further as to why this strange behavior happens, we're likely to answer, "Because the person is retarded," as if giving the person such a label explains her actions. So we go home and sit down in our good old rocking chair to ponder a little further why that strange behavior occurs, rocking gently back and forth as we do so. Until we stop in mid-rock, realizing that we're doing the same thing the retarded children were. We're performing a repetitious act — we're rocking in our chair. And this is the first time we've ever asked ourselves why we do it. It seems so natural since everyone does it, and we've done it all of our lives. But nonetheless we're behaving when we sit in the rocking chair and rock back and forth. The results of those actions control them. It seems most likely that this act is producing some sort of reward. But what kind? A learned reward? Or an unlearned reward? Let's use our four questions to help us decide.

First, **are the actions of other species controlled by those rewards — whatever they are?** It seems that way. When you go to the zoo you see many primates sitting on a swing and swinging back and forth, or just sitting on a stationary perch and rocking back and forth. This indicates that rocking might produce an unlearned reward.

Second, **does that same behavior seem to produce rewarding results for all human beings?** I don't know anyone who dislikes rocking. This also indicates that we may be dealing with an unlearned reward.

Third, **what biological basis might there be for such a reward?** Perhaps the stimulation of the vestibular canal in your inner ear, perhaps the slight muscle activity, or perhaps both. A little more evidence that the reward is unlearned.

And fourth, **could the results of the behavior have become a learned reward?** We are not any more likely to get food or any other outside reward when we rock than when we sit still, though as infants we may often have had rocking paired with feeding. But that was a

long time ago, and the learned reward would have lost its value by now since Mommy no longer rocks us when we eat. So we see no obvious source of pairing with other rewards. This further supports the notion that rocking produces some sort of unlearned reward — a reward that helps account for why we rock back and forth in our rocking chairs and why the retarded girl rocks back and forth in her stationary chair.

- ■13 Review: State the Law of Effect.
- ■14 Analyze the possible rewards that may make rocking behavior more likely, again using the four questions cited above.

SELF-INJURY BY INSTITUTIONALIZED CHILDREN: LEARNED REWARDS

But how do we get from your gentle rocking in a rocking chair to Johnny's violent head-banging? Well, we may try to get there by looking at the more moderate behavior of one of the other retarded children. For instance, the child's rocking in the stationary chair is much like your more common form of rocking in a rocking chair. And even the little boy's fiddling with his hands may result from much the same kind of rewards. In both cases, the behavior itself produces some sort of slight stimuli for the senses that may be mildly rewarding.

But why do these mild rewards control so many of the actions of the retarded? Why do they spend so much time in such activity? Are these sensory stimuli stronger rewards for the retarded than for us? Perhaps not. Retarded children may simply not have the chance to get at much stronger rewards during most of their day. Look at the many complex things you do that produce so many of your rewards. You read, you write, you drive a car, you go to school. Many retarded children don't have those skills, so they can't get the rewards those actions produce. And often the world they find themselves in no longer provides the chance to get those rewards, even if the child does have the skills. So that may explain why those mild sensory rewards exert control over the behavior of the retarded so much of the time.

But what about Johnny's extreme form of that behavior? Does he need to pound his ears so hard in order to get that sensory reward? Here's where the social reward of attention may come in to add to the unlearned reward of sensory feedback, causing the behavior to move step by step from its fairly normal form to its very abnormal form. How might that work?

Suppose you were the attendant taking care of Johnny and you noticed him gently hitting his ear with his hand? You might even notice that sometimes he hit a little harder than usual, causing you to worry that he might hurt himself. You ask him to quit. You even stop what you're doing to go over and hold his hand, to keep him from hitting himself for a few minutes, hoping that somehow he'll get the idea and stop beating his head when you let go.

That's at least what you might have done before you learned about behavior analysis. Now you suspect that your talking to him and holding his hand was a form of attention, one that worked more as a reward for head-banging than as a signal for stopping that act. Your attention may be even more of a reward when you're busy and don't have much time to spend with Johnny. So head-banging turns out to be one of the acts Johnny has learned that will almost always get your attention. But as you get busier and more used to his head-banging, Johnny must bang his head with ever-growing violence before you give your attention. And so that's just what the child does. Without meaning to, his well-intentioned, but poorly informed, world conspires to shape this act from a harmless one into something that can hurt him very badly — so badly that Johnny must be restrained.

Of course, his restraint prevents any chance he would have to learn other more useful acts. There are many Johnny's sitting around the country with their arms tied down to prevent them from hurting themselves — a position they may maintain for the rest of their lives, unless someone intervenes with an approach that gets rid of this harmful behavior and sets up better options.

■15 Give two reasons why "mild" rewards, such as sensory feedback stimuli, control so many of the actions of retarded people.

■16 What reward may supplement sensory rewards and cause normal forms of behaviors to evolve into self-injurious forms?

■17 Explain the role attention plays in increasing the likelihood of severe self-abusive behaviors like head banging.

THE GRADE-SCHOOL CLASSROOM

"I don't know what's the matter with Barbie Badnews. She will not stay in her seat. She gets up. Wanders around the classroom. Sharpens her pencil. Goes to the water fountain. Goes to the bathroom. And when she's in her seat, she's not much better. Always whispering, or giggling, or just fussing around. When I see her wasting her time or disturbing the other children, I ask her to get back to work. And she always does. But within minutes she's back at her monkey business. And I don't have time to always be telling her what to do; I should be grading the kids' papers."

★   ★   ★

What do you think's going on here? Studying isn't getting enough rewards to maintain it; it might even be getting a few aversives. For instance, if Barbie Badnews has trouble doing her assignments when she tries, her failure might be aversive. But there are plenty of rewards for doing things other than studying. Getting up and fidgeting about the room produces some mild, unlearned sensory rewards. And the attention she gets from her peers is a fairly strong social reward in maintaining her disruptions. But these rewards are small compared to the social reward of attention she gets from her teacher, who only pays attention to her when she's not studying.

Now what about the teacher? That poor soul tries to escape the aversive sight of Barbie goofing off by telling her to get back to work — at the same time he unintentionally increases the likelihood of her goofing off. Barbie and her teacher are both victims of a vicious cycle — a cycle we often see in the classroom. There the teachers who, hoping to stop the goofing off, reward those actions with attention. And the attention causes those actions to increase in frequency. As

the children spend more and more of their time acting up, the teachers spend more and more time trying to get them to stop, though, of course, just the opposite will happen because the teacher's attention is really a reward.

- ■18 Describe the behavioral effects produced by Barbie Badnew's goofing off and those produced by her studying.
- ■19 What reward does the teacher get for attending to Barbie's disruptive behavior?
- ■20 Thought question: Describe the "vicious cycle" that may develop in this classroom situation. What procedure(s) would you prescribe to break the cycle if you were asked to do so?

CHILD REARING: THE SMILER

Six-month-old Pat Pretty looks up at you, blinks his eyes with those long, lush lashes, and then he lays the big one on you — he smiles.

"He smiled. He smiled. Did you see that? He smiled at me." And you rush over to give him a hug and a big, juicy kiss.

A social interaction to delight the heart of the most hardened. Little Pat smiles, allowing him to escape the gas that has built up in his little tummy. But that smile also followed your looking at him — a misconstrued social reward. "He smiled at me. He loves me!" Only the most cynical would call it anything but love. And what do you do? You follow that smile with a hug and a kiss. Of course, you didn't really think you were making the smiling response more likely. But that doesn't matter — the kiss had that effect anyway, with the result that Pat may be more likely to smile at you even when he doesn't have gas. And with a little luck you'll be well on your way to raising a grinner. And the grinners, the smilers, shall inherit the earth, for who among us can resist a nice smile? The smilers smile when we do things for them, a reward that makes us more likely to do other things for them. They even smile just because we're around them, a reward that makes them popular with everyone — because everyone wants to bask in the radiance of the person with the thousand smiles.

■21 Describe how you might increase the act of smiling in a young child.

SEX

Why does sexual behavior occur? Because it produces rewards. For instance, it produces the unlearned reward of tactual stimulation of the errogenous zones: the genitalia, the nipples, the lips and the anus — areas dense with nerve endings that produce rewarding stimulation when touched. But in our culture sexual behavior often involves another reward, a social reward: "If she'll do that with me, she must really love me."

— Oh, love, thy name is social approval.

* * *

Many people ask, with a look of disgust on their faces, "Why do perfectly nice people become homosexuals or lesbians?" I ask, with a look of surprise on my face, "Why doesn't everyone become at least bisexual, or unisexual?" After all, if the unlearned reward supporting sexual behavior is tactual stimulation of the errogenous zones, why does the source of that stimulation matter, as long as it provides the right touch?

Biologically it doesn't matter for the individual. But for societies, in which our social practices evolved, it did matter. Because "spilling your seed on the soil" might lead to the extinction of your society. So we are taught that all but a few sources of sexual stimulation are evil. Our society pairs aversives with the "forbidden" acts and with talk about those acts. And so what happens to acts that involve a taboo source of sexual stimulation? They also generate aversives that may help suppress those acts. Of course, a few have sampled those forbidden fruits without being struck by lightning bolts, and now they keep doing so at a high rate.

■22 What unlearned rewards increase the likelihood of sexual behavior?

■23 "Oh, love, thy name is social approval." Explain this statement in terms of a learned reward increasing the likelihood of sexual behavior.

■24 Why might a society be justified in attempting to prohibit forms of sexual behavior that can't possibly result in reproduction of its numbers?

DEPRESSION: AN AMERICAN TRAGEDY

"What's the matter, Mom? You seem depressed."

"It seems like I don't have any purpose in life any more now that our little baby, Suzie, has gone off to college. No one really cares about what happens to me now. I feel useless."

"Gee, Mom, you shouldn't feel like that. You know we all love you. Dad loves you, even if he never says so. Suzie loves you. And I love you. Why, I wouldn't be calling you long distance if I didn't love you. And Dad wouldn't have written me about how depressed you were if he didn't love you, too."

"I could have had a career. After all, I went to college too, you know."

"Yes, Mom, I know."

"But I dropped out when your dad and I got married so that I could send him through school. He needed me then. And then when I was going to go back to college, I had you. And you needed me. And then I had little Suzie. And my life was so meaningful. But now no one needs me."

"But Dad needs you."

"No he doesn't. We have a person who comes in twice a week and takes care of the house. And he's always working late at the office, or bowling, or playing golf or going to the lodge meeting. So I don't do much more than fix coffee and toast for him; he even complains about the toast. And he spends the weekends mowing the lawn, so that he's always too tired to take me anyplace or have anyone over."

*   *   *

Almost all of Mom's actions were maintained because they got rewards and escaped or avoided aversives from her family. At first her cooking, housework and grooming were all based on a high density of rewards in the form of social approval from Dad. And the un-learned reward of sexual stimulation from Dad not only increased Mom's sexual behavior, but it also increased the general value of Dad's social approval for all of Mom's other acts. And then the acts involved in child rearing became more likely because they produced rewards such as the unlearned reward of the stimulation from the nursing in-fant and the learned social approval from the loving grandparents, husband, neighbors and the whole world — everyone who loves babies. And no doubt she also performed many of her maternal duties be-cause of an avoidance procedure based on the aversive faultfinding the world would do should she fail to be less than a great mother. But, over time, the husband, the children and even the house became less and less dependent on her, with the result that her maternal and wifely behavior dropped out, even to the point where she let herself go physically since she was no longer receiving the compliments she once had for her attractive appearance. She gained weight, laid around in an old housedress, and often didn't get her hair brushed by the time dad got home for dinner.

Mom thought about joining the Eastern Star Lodge or the Ladies Aid to the Main Street Methodist Church, and she thought about tak-ing a ceramics class. But she just never got around to it. If you haven't done anything other than housewifing and mothering for the last 20 years, it's very hard to start doing new things. It's very hard to make brand new responses without some little rewards to get you headed in the right direction, and Mom's world didn't seem to have any little rewards for applying to the Eastern Star, even though she might have been much happier once she joined.

So there was nothing left to do but sit around and watch TV. Well, not quite. She could also complain about how depressed she was and act in a manner that would make her distress clear to even the most near-sighted observers. And, of course, acting depressed be-

came even more likely because of a reinforcement procedure based on the rewarding attention of friends and relatives ("Come on, Mom, you know we love you."). But these expressions of sympathy didn't produce any rewards for the sympathizer, they didn't help Mom feel better — she just became more and more depressed, even though we kept telling her how much we loved her. And her depressed behavior was very aversive to everyone she met. And this set up an avoidance process, making the acts of staying away from Mom more likely because of the learned aversives she gave (her depressed talk). After a while, the only friends Mom had left, the only sources of rewards that never deserted her were Burt Parks, "Love of Life," "As the World Turns," and Russell Stover.

Thus, according to a behavioral analysis, we might suggest that psychological depression results from the extinction of functional acts, the presentation of rewards for depressed behaviors, and the lack of rewards for starting to engage in other potentially rewarding behaviors (e.g., the Ladies Aid, Eastern Star, etc.). In later chapters, we'll look more closely at depression.

- ■25 What rewards and aversives initially increase the likelihood of maternal acts? (Indicate whether each is learned or unlearned.)
- ■26 Why do such maternal acts decrease in likelihood?
- ■27 Explain why it's often hard for mothers to begin making brand new responses, like joining clubs or going back to school.
- ■28 Analyze psychological depression in terms of the behaviors involved and the procedures which make these behaviors more likely.

SELF-CONTROL WHERE ART THOU?

Time to go to bed, if you're going to get a solid six before you have to get up tomorrow. Ah, but you'll watch just a few more minutes of this late show, "I Was a Teenage Behavior Modifier." And there you sit, pushed and pulled by the rewards and aversives of life. The ongoing, mild rewards of the TV show make it more likely that you'll

continue to sit there with your eyes open, staring at the tube. And perhaps there are a couple of aversives involved in going to sleep as well. The effort of getting up out of bed, walking over to the TV and turning it off may be mildly aversive. And the result of that sequence of acts would be the loss of the rewarding TV show — another punishment procedure. So all those procedures conspire to keep you in front of the tube.

But you've also got an avoidance procedure pulling you in the other direction. If you perform the acts of shutting off the TV and going right to sleep, you'll avoid the aversive results of being wiped out all the next day. Which of those competing sets of procedures will win? (If only Robert Reinforcement weren't starring in the movie.)

Four hours later: What's that? oh, the alarm. What time is it? Seven a.m. — I don't think I need as long to study for my psych test as I'd planned. It's more important that I'm wide awake and feel good than that I've spent all that time cramming. Besides, I've read all of it — well a lot of it anyway. If I don't know it now, I never will. I'll just set the alarm back two more hours. (A powerful set of procedures conspire to keep you in bed, poor innocent victim that you are.)

The act of getting out of bed is being stopped by a punishment procedure based on the aversive results of walking around feeling groggy all day. And the act of going right back to sleep is increasing in likelihood because it allows you to escape from the aversive stimulus of tiredness, which is currently weighting you down. And the reason you even bother to set the alarm at all is due to an avoidance procedure — you're avoiding the real catastrophe of sleeping through the exam itself (though maybe that wouldn't be such a bad idea after all, now that you think of it).

But what procedures control all that rationalizing you're doing — those shallow excuses you give for why you're sleeping in rather than getting up to study as you'd planned? You find it aversive to tell yourself that your immediate comfort is more important to you, at least right at that moment, than your school work — after all, what did you come to college for anyway? So you avoid those aversive results by coming up with a halfway plausible excuse for why you're staying in bed. By the way, by the time you've gotten into graduate

school, you'll have to come up with more plausible cop-outs than these, since, by that time, you'll be so familiar with all your cop-outs that you'll need a much more convincing story to avoid those aversive guilt feelings.

- ■29 What behavioral procedure(s) make it likely that you'll stay up too late instead of getting the sleep you need?
- ■30 What behavioral procedure makes rationalizing more likely? Describe how this works.

ONE FLEW OVER THE CUCKOO'S NEST: A BEHAVIORAL ANALYSIS OF KEN KESEY'S NOVEL

McMurphy got into a brawl and was arrested. Society then imposed a pair of punishment procedures on him — the removal of the rewards normally available to a free man and also the presentation of the aversive of having to do hard, grueling, manual labor — prison. So big Mac acted crazy, an act that was made likely because it might allow him to escape from an aversive condition, the heavy work detail. It worked — Big Mac got to go to the state mental hospital to do easier time. And right away, McMurphy started calling the shots, from his very first contact with the hospital — his intake interview with the head psychiatrist — where he managed a few off-the-wall remarks that shook even that jaded physician. McMurphy was in control. And on to the ward where he continued to enjoy putting the staff on, going far enough out of line to produce a rewarding startled response from the staff, but not so far as to produce any aversives.

And the other inmates, a ward full of patsys, were just waiting to be controlled for fun and profit. Yes, McMurphy would end up with all their cigarettes and all their money through his card games. Still, they were almost too easy to control, and when the game is too easy, the winning of it hardly is enough of a reward to maintain the playing. Unless a skilled adversary comes along.

Enter Big Nurse. She too found control very rewarding. And he began the battle in earnest, now a battle worth winning. But McMurphy

had another learned reward controlling his rebellion against the oppression of Big Nurse — the respect and admiration of the other inmates. McMurphy had become their hero, champion of their cause. And now who's in control? Watch out, Big Mac. The people who hold the rewards hold the controls. Watch out for those patsys, because Big Mac loses all respect he has gained from the inmates if he doesn't do battle with Big Nurse — avoidance of the loss of rewards. But if he does do battle with Big Nurse, she may keep him in the hospital longer than he had planned — punishment through the removal of the rewarding opportunity to get back into society. And McMurphy learns that she also has a couple of other aversives up her sleeve — electroconvulsive shock therapy and surgery on the frontal lobes of his brain — aversive.

So McMurphy can win the game of controlling the other patients and keeping their respect and admiration, or he can get out of the hospital in a reasonable time and in reasonable shape. So, of course, he decides to do the only rational thing — he'll play it by Big Nurse's rules — the stakes are too high, even for a high-roller like Mac. But yet another procedure comes into play. Not only do the inmates begin to withhold their adoration from McMurphy. They begin to show their disapproval and disappointment — aversive events that punish McMurphy's compliance with Big Nurse. To escape that aversive state of affairs, he challenges Big Nurse, eventually resulting in the ultimate aversive — Big Mac is killed. And this is neither the first nor the last time that social rewards have programmed martyrdom.

■31 Name two rewards and one aversive that originally increased the likelihood of McMurphy's "crazy" actions.

■32 Explain the three procedures which increased the likelihood of Big Mac's rebellious behaviors.

■33 Explain the two procedures which decreased the likelihood of Big Mac's rebellious behaviors.

CONCLUSIONS

The Law of Effect causes most of the rich and varied actions of hu-

man beings. The Law of EFfect causes actions we like or at least may not object to — physical exercise, attending movies, working to avoid failure, smiling, sexual behavior, housework, cooking, grooming, child rearing and martyrdom that may be worthwhile. And the Law of Effect also causes actions we don't like — talking in the style of Terry Southern or Don Rickles, self-injury, disruptive acts in the classroom, managing the classroom poorly, depressed behavior, procrastination, and martyrdom that may be useless.

chapter 5
stimulus control —
discrimination and
generalization

INTRODUCTION

In the last chapter, we saw that the past effects of our acts tend to control the future of those acts. But what about the events that come before our acts — events like a green traffic light before we push on the gas, like the waiter putting the food on the table before we start moving our knife and fork to eat? How do these events affect whether or not those acts occur? In this chapter we'll begin looking at such events (called stimuli or cues) that precede behavior.

And how do stimuli that resemble such cues control our acts — what happens if we see a yellow-green traffic light — not a green one? How can we respond the right way to a cue we've never seen before, one that has something in common with more familiar cues? We will be looking at these sorts of stimuli too.

STIMULUS CONTROL

Whenever Professor Tradition announced he would give a quiz during the next class period, Orvill Avoidance would read the assigned pages. He wouldn't do the reading, though, when there wasn't going to be a quiz. We suspect his actions changed because of the announcement — studying for announced quizzes had avoidance effects in the past. He prevented bad grades by studying for such quizzes, and so the announcement was a "cue" for reading the assignment.

Whenever Susie Sweet was in the room during the office Christmas party, Aaron Amorous would stand hopefully under the mistletoe. He'd sit down, though, when she left the room. We suspect his actions changed because of her absence — standing under the mistletoe when Susie was out of the room hadn't produced reinforcement effects in the past, and so her absence became a "cue" for the stopping of a reinforcement procedure.

Sharon Shy wouldn't stop talking to Uncle Herman whenever he was around. Sharon was very quiet, though, when other people were around. We suspect her actions changed because of Uncle Herman's presence — talking to Uncle Herman had produced rewards in the past, and so he was a "cue" for her high rate of talking.

Whenever Barbie Badmouth's critical, straight-laced mother visited her at college, Barbie acted like a mild-mannered person. But when Mom left, Barbie talked so much trash the dorm walls blushed. We suspect her actions changed because around Mom, Barbie's bad language had produced aversives in the past, therefore Mom was an effective "cue" for good manners — for not using bad language.

So we act the way we do around certain people or places or things because of the past behavioral effects paired with those people, places or things. Professor Tradition's announcement is a cue that an avoidance procedure is in effect for studying. Susie Sweet's absence is a cue that a reinforcement procedure is not in effect for standing under the mistletoe. Uncle Herman's presence is a cue that a reinforcement procedure is in effect for talking. Mother's presence is a cue that a punishment procedure is in effect for swearing. All of these people serve as cues that control the acts of others.
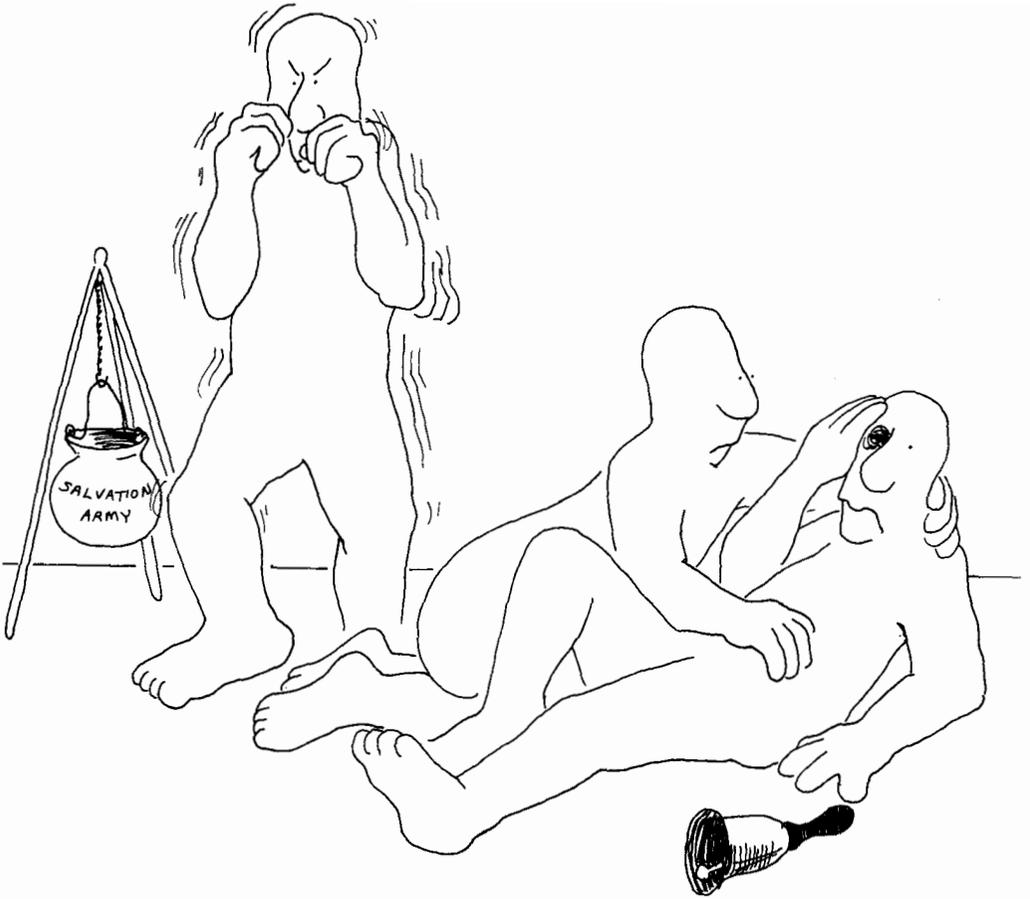
I'd like to apologize for my friend. He's an ex-prize fighter, and he comes out fighting everytime he hears a bell.

Cue: a stimulus paired with a behavioral procedure.

As a result of pairing, the cue usually controls the rate and occurrence (or nonoccurrence) of an act. The way a cue affects our actions depends on the behavioral procedure the cue has been paired with in the past. In other words, the change in the act's likelihood results from the kinds of effects the act has normally produced in the cue's presence. For instance, Professor Tradition announced a quiz, and then Orville prevented bad grades on it by studying. Professor T's announcements became cues because they were paired with avoidance procedures. So the announcements were **avoidance cues.** And studying tends to be more likely to take place when the avoidance cue is present. In the presence of an avoidance cue, a particular act will avoid some aversive or the removal of a reward.

Avoidance cue: a stimulus paired with an avoidance procedure.

And what kind of cue is Susie's absence from Aaron Amorous? A cue paired with an extinction procedure, since his acts haven't produced their usual rewards when she's gone. So standing under the mistletoe tends to be less likely when the **extinction cue** is present. In the presence of an extinction cue, a particular act will not produce the reward or remove the aversive as it otherwise would.

Extinction cue: a stimulus paired with an extinction procedure.

Sharon's outgoing acts occur when Uncle Herman is present since Uncle Herman is a cue paired with a reinforcement procedure. In other words, when Uncle Herman has been present, outgoing acts have produced rewards. And outgoing acts tend to be more likely when the **reinforcement cue** is present. In the presence of a reinforcement cue, a particular act will produce a reward or remove an aversive.

Reinforcement cue: a stimulus paired with a reinforcement procedure.

Barbie Badmouth's act has produced aversives in her mother's

presence. So her mother tends to be a cue paired with a punishment procedure. And swearing tends to be less likely when the punishment cue is present. In the presence of a punishment cue, a particular act will produce an aversive or remove a reward.

Punishment cue: a stimulus paired with a punishment procedure.

TABLE 5.1
Kinds of Cues and Their Effects

Stimulus Paired With	Typical Change in Likelihood of Act in Cue's Presence
Avoidance Procedure: a stimulus in the presence of which an act will 1) prevent the presentation of an aversive stimulus or 2) prevent the loss of a reward.	Tends to increase the likelihood of the act when the cue is present.
Extinction: a stimulus in the presence of which 1) an act will not produce the reward it normally does or 2) will not remove the aversive it normally does.	Tends to decrease the likelihood of the act when the cue is present.
Reinforcement Procedure: a stimulus in the presence of which an act will 1) produce a reward or 2) remove an aversive stimulus.	Tends to increase the likelihood of the act when the cue is present.
Punishment Procedure: a stimulus in the presence of which an act will 1) produce an aversive stimulus or 2) remove a reward.	Tends to decrease the likelihood of the act when the cue is present.

When a stimulus controls the likelihood of an act, we say **stimulus control** is occurring.

Stimulus control (or cue control): the control of the likelihood of an act by a cue.

Many stimuli in our everyday lives serve as cues exerting cue control over our actions. Let's look at some. A ringing doorbell usually cues the act of opening the door, because that act has produced a reward in the past — a visitor. The hot sun on your back usually cues moving yourself into the shade, because that act has removed an aversive in the past — too much heat. An "out-of-order" sign on a drinking fountain usually cues the stopping of the reinforcement procedure (extinction) because that act hasn't produced its usual reward in the past — a drink of cold water.

- 1 Define a cue and give an instance of one.
- 2 Define and give an instance of an avoidance cue, an extinction cue, a reinforcement cue and a punishment cue.
- 3 State the definition of stimulus control and cite an instance.

INTERNAL AND EXTERNAL CUES

Most of our acts do not always produce rewards or aversives. And often there are cues associated with whether those acts will produce their typical behavioral effect. All our lives we keep on learning to respond to more and more of those cues. As we proceed in our behavior analysis, we find ourselves looking at cues more closely all the time. And the further we look the more interested we become in how cues control our acts from moment to moment. Seldom does a single cue control an act. Even a simple response, like telling someone the time, is often under control of at least two cues: the request "what time is it?" and the clock's face.

But cues can also be internal as well as external. In either case the cue is physical energy that we can respond to. **External cues** are those

whose source of energy is outside our body, like music on the radio or the sight of someone walking down the street. The **internal cues** are those whose immediate source of energy is inside our body, like a stomach ache or the feeling of motion when we swing our arms. We may have a stomach ache because we ate something that was earlier outside our body, but the aching stomach itself is an internal cue.

Internal cue: a stimulus whose energy source is inside the body.

External cue: a stimulus whose energy source is outside the body.

- 4 What is an internal cue? Give an instance of one.
- 5 What is an external cue? Give an instance of one.

STIMULUS GENERALIZATION

How we act depends largely on the cues present. Stimulus control, or cue control, may play almost as big a role as the Law of Effect in controlling our acts. Cue control combines with the Law of Effect, causing some acts to occur and others to stop. The effects of our acts determine whether or not we'll repeat them. And the cues paired with those effects determine when and where we will repeat or stop repeating those acts. For instance, you talk about what you want to do with your life and for that act, your best friend gives you strong approval. Talking about your plans has produced a reward, so according to the Law of Effect you'll be more likely to do so. And since your friend was paired with that effect, you'll most likely increase your rate of such talking when your friend is around. Your friend has become a cue for that act.

But acts occur also in the presence of stimuli where they've never produced effects, and this happens when the new stimulus is somewhat like the cue present when an act produced reinforcement or avoidance effects. For instance, you never have to think twice in order to respond to your name whether it's written in dark print, in light print, in small print, or across the sky in block letters. And whether
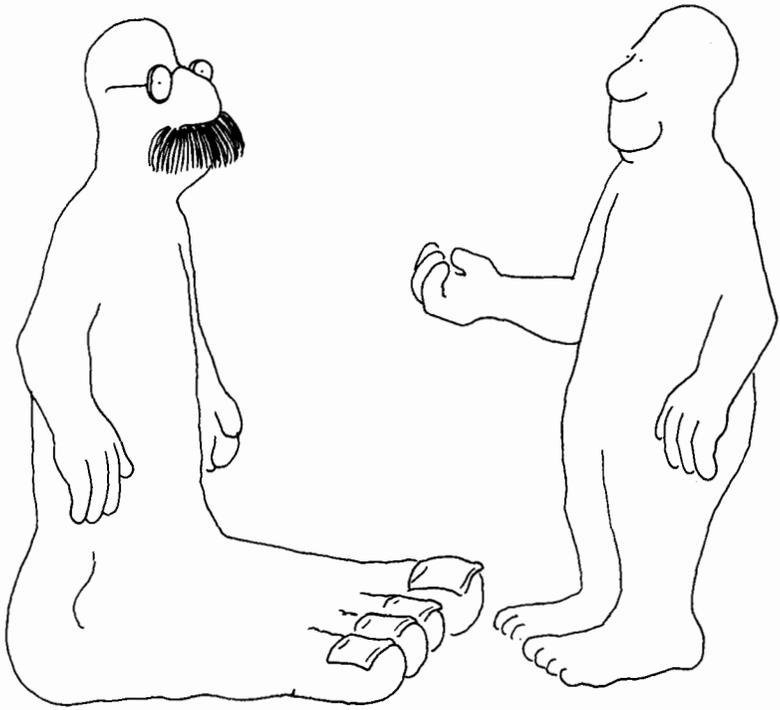
it's whispered softly in your ear, screamed from the top of the stairs, or sung by the 500-voice St. Louis Aquarium Choir, each of these stimuli will control your behavior. And of course you can recognize an old friend from the front view, from the side, in new clothes or old.

Each of those sights and sounds is a different stimulus, though all the written words are somewhat alike, all the spoken words are somewhat alike, and all the views of your friends are somewhat alike. So each of those three sets of stimuli will usually control the proper action. This is **stimulus generalization** — acting the same when similar stimuli are present. And it is most likely to occur when stimuli are very much alike. In fact, generalization among stimuli that are physically alike appears to be unlearned. You don't have to learn to respond the same way to the different pitches. And you don't have to learn to identify your friend from different views or distances — it happens automatically.

Stimulus generalization: responding in much the same way when similar stimuli are present.

Let's look at another instance of stimulus generalization. You can respond to the song "Let It Be" whether it's played in the key of F or the key of G. You can respond to it if it's played in dentist office, muzak style, or if it's played live by George Harrison himself. Responding in the same way to the different versions of the song may mean you say its name, sing along or leave the room every time it comes on — but it's stimulus generalization in each case.

- 6 Define and give an instance of stimulus generalization.

STIMULUS DISCRIMINATION

Often we want to stop generalization among stimuli that are somewhat alike. For instance, look at the behaviors of Ms. and Mr. First-Time-Parents and their son, Carl. Carl's slightest sound sends Dad

running for his cassette recorder, in hopes of capturing the first words
of his first son. And when Carl says his first "da-da," he is hugged
and covered with kisses. Not wishing genius to go unnoticed, Dad
runs to get a neighbor. And the neighbor he happens to find is a tall
man, just like Dad. So when the neighbor walks through the nursery
door, Carl happily screams "da-da," while Mom, Dad and the neigh-
bor blush. Carl's act of saying "da-da" generalized between two stim-
uli, Dad and the neighbor. While acting in accord with the laws of be-
havior, little Carl unknowingly embarrassed his parents, though all is
far from lost since Mom and Dad can now help Carl respond only to
Dad as "Dad" — they can set up a **stimulus discrimination.**

Stimulus discrimination: responding in the presence of some sitmuli
while not responding in the presence of other stimuli.

How does stimulus discrimination occur? We increase the likeli-
hood of the act in the presence of the right cues and decrease the
likelihood of that act in the presence of cues that should not bring
about the act. We call this whole procedure **discrimination training.**

Discrimination training procedure: a cue for one behavioral proce-
dure alternates with a cue for another behavioral procedure, and usu-
ally the second stimulus is a cue for the stopping of the first behav-
ioral procedure.

Often in discrimination training, a reinforcement procedure (based
on rewards) is used in the presence of one cue and an extinction pro-
cedure in the presence of the other. The result, then, is that the per-
son will respond when the reinforcement cue is present but not when
the extinction cue is present. When this happens, we say the behavior
is under discriminative control (or that stimulus discrimination is oc-
curring). We use such discrimination training procedures to decrease
the amount of stimulus generalization between two cues and to in-
crease the amount of stimulus discrimination between two cues.

So back to Mom and Dad's problem. How can they help stimulus
discrimination to occur? The best way would be to have Carl's re-

sponse, "da-da," produce a reward only when Dad is close by. At that time Mom and Dad should scoop Carl up, talk to him, kiss him — all forms of social rewards that Carl already has come to respond to. And when Carl makes that response around someone other than Dad, his parents should make sure the response doesn't produce a reward, perhaps even following it with a mild social aversive, like "No, Carl, that's not Dad."

- 7 Define and cite an instance of stimulus discrimination.
- 8 Describe the stimulus discrimination training procedure.

THE LAW OF STIMULUS GENERALIZATION

As we just saw, stimulus generalization can sometimes occur between two cues when we'd just as soon it didn't. But in fact, if the two cues are similar, generalization is quite likely. Remember the time you came home with the "original" unearthed shoes, rather than the Earth shoes you set out to buy? Stimulus generalization — the imitation shoes controlled your buying response because they were similar to the real thing. And are you still calling mauve "purple" and avacado "green"? Stimulus generalization again, with cues that are much alike controlling the same act. Such acts are in accord with the **Law of Stimulus Generalization.** On the other hand, you're not likely to call a red apple "green" because the two colors differ enough so that stimulus generalization isn't likely to occur between them. Nor are you likely to come home with glass, ballroom dancing slippers when you set out for Earth shoes — little stimulus generalization is likely to occur between such stimuli.

The Law of Stimulus Generalization: the more similar two stimuli are to each other, the greater the stimulus generalization between those stimuli.

In other words, we tend to respond much the same way to two stimuli when they are similar; and we tend to respond differently to

two stimuli when they are dissimilar. So it is most difficult to establish stimulus control between two stimuli when they are very similar; it is most difficult to train a person to respond one way to one stimulus and another way to another stimulus when those two stimuli are very similar.

- ■ 9 Describe the Law of Stimulus Generalization and cite a pair of instances that illustrate that law.

CONCEPTS AND CONCEPTUAL CONTROL

The philosophy teacher stared out the window a few seconds before turning back to the class to deliver his final words. The students sat on the edges of their seats. "And so I can't tell you what makes a man a man. Man is a concept, and it is up to each of you to define the limits of that concept."

As they filed out of the classroom, Phil Osophy said, "Whew, that was one of the most exciting lectures I've heard. 'Man is a concept . . .' Beautiful, really beautiful. How'd that lecture grab you?"

Sally Skeptic replied, "The style was a little heavy, but I thought it was all right. Person is a concept — true — but nobody has any trouble telling what is a person and what isn't, so what's the big deal?"

"Oh, Sally, you know that's not what he meant."

"I know. But the thing is that the same principle applies in the way we learn how to identify a person from anything else — an apple, a tree, good values, bad values, courage, cowardice, dignity and so on."

"Oh," said Phil, "and just how do we learn a concept?"

"Suppose I show you?"

"All right then, show me."

Sally, mimicking a tour-guide, "Right this way, ladies and gentlemen." She pushed open the large door of the Psychology building, taking Phil up a flight of staris and leading him to the labs where the students did research with animals. Pigeons filled the cages lining the wall of one of the small rooms. Sally led Phil to one of the cages,

opened the door, and the bird inside jumped out onto her hand. "Phil, meet Irving the pigeon," Sally said.

Next they went to another room where large chambers, each with a small window, were hooked up to racks of computer-like circuits. Sally placed Irving inside one of the chests and flipped a number of switches. "Now, Phil," she said, "Irving will show you 'the concept of person.'" Sally took out a number of children's wood blocks. Each side of each of the blocks had a picture pasted on it. Some of the pictures contained scenery, others, animals, and still others, people — in every setting and position Phil could imagine. "Inside this chamber is a screen that the pigeon can see. So when I put a block in the slot, the pigeon will be able to see the picture on it. He'll peck this red disc if there's a person anywhere in the picture," Sally said.

She put in the first block — one with a picture of three people walking through a woods. Phil heard the disc peck. Again and again, Sally changed the picture on the screen. If there were a person, or any part of a person in the picture, the pigeon would peck the disc and get a little grain, though if no person were in the picture, the pigeon would not peck the disc. Sally changed the picture almost a hundred times, and the pigeon made the correct response — or non-response — each time.

"Well," said Sally, "there you have it — the concept of 'person,' or at least the concept of 'picture of person.'"

"Amazing," Phil said. "The smartest bird that ever lived."

"No. There are 20 other birds in this room trained to do the same thing," Sally said.

"But how did he do it?" Phil asked.

"Concepts aren't something within us, Phil. They're just groups of stimuli that exert control over our actions. When we respond properly to an instance of a concept we're responding to cues within a class of stimuli. And each member of the class is somewhat like all other members of that class. In this case, all the pictures with people in them formed a stimulus class, or concept. I gave Irving a little grain each time he pecked the key when a person was in the picture. But no key pecks produced grain when there was no person. Now that the concept controls Irving's behavior, I could give him pictures all

day, and he'd always peck the key if there was a person in the picture, never pecking the key if a person wasn't in the picture. The sameness of all members of the stimulus class control Irving's actions. I like to call it 'conceptual control.'"

"What would happen if you put in a new picture — one Irving had never seen before?" Phil asked.

"I'll show you," Sally replied, placing such a stimulus in the slot. And the pigeon pecked the key just as it should, since this new stimulus contained a picture of a person.

"Was that just luck?" Phil asked, shaking his head.

"No," Sally answered. "We can show Irv as many new pictures as we want and he'll get them all right. Training with one set of pictures will cause Irving's act to generalize to novel instances of pictures of people. The bird will almost always be right."

★   ★   ★

What is a concept? Something within us? No, Sally was right — a concept is a class of stimuli that controls our actions. Concepts are a type of complex cue.

Concept (stimulus class): a class of stimuli where each member is somewhat like all other members of that class.

In the case of the pigeon's people-picture concept, all of the pictures of people were somewhat alike — they all contained people. And conceptual control is a type of cue control. When we act "conceptually," we're responding to cues from a stimulus class — a concept. **Conceptual control** is control of acts by a concept. We say that conceptual control occurs when two things happen:

1. The person's or animal's acts generalize to all members of that concept. For instance, the pigeon responded to all of the pictures of people (people concept).
2. The person or animal discriminates between members of that concept and members of other concepts. For instance, the pigeon did not respond to the pictures that didn't contain people (nonpeople concept).

Conceptual control: Behavioral control by a stimulus class, or concept, where (1) generalization occurs among members of the stimulus class, and (2) discrimination occurs between members of that stimulus class and other stimulus classes.

As another case, let's look at the concept of "red" or "redness." Red forms a stimulus class, with everything that's red being a member of the class, "things that are red." Suppose we want to teach redness to someone; how would we go about it? How do we get conceptual control by all stimuli that are red? How do we get generalization among members of the stimulus class and discrimination between members of that stimulus class and other stimulus classes?

The pigeon's response generalized to all pictures of people after producing rewards when many different pictures were present. We get generalization among instances of the concept "red" in the same way by increasing the likelihood of the response "red" when many different kinds of red things are present. For instance we'd have the response of saying "red" produce a reward if the redness occurred as part of a matador's cape, a stripe in a flag, or the nose on Bozo the Clown. When we are trying to make the response more likely it's important that we use many kinds of stimuli. If we only increased the likelihood of the response in the presence of Bozo's nose, the response "red" might only occur in the presence of that nose or perhaps even different noses, but not other red things. However, if we reward the response in the presence of many kinds of red things, the color red will cue the response "red," without regard to where the redness occurs.

What actions would show discrimination between red and other concepts? Well, the person must not say "red" to any non-instances of red. In other words, the person must not say "red" when that cue is absent. Black capes, green stripes, or normal noses must not control the response "red."

Let's look at another case. Suppose you wanted to teach the concept of Elton John's music to Johnathan Superstraight, who's in love with Martha, the brightest, most talented, hippest woman in town.

But Johnathan is far from hip and, without a little help, Martha will never notice him.

Remember, for Johnathan to respond correctly to the concept he must:

1. Generalize among all instances of Elton John's music.
2. Discriminate between Elton John's songs and songs by other artists.

So you sit down with Johnathan and bring out a number of albums — some by Elton and some by other musicians. You tell Johnathan, who looks a little nervous, to blindfold his eyes, since you don't want the names on the album covers to be the cues controlling his response of saying, "That's him."

You put on the first song, "Yellow Brick Road."

"Yep, yep," Johnathan says, getting all excited, "that's him!"

"Right. Now try this one." You change to a song by the Bee Gees. "How about this one, Johnathan?"

"Yep, that's him all right," Johnathan says.

"No, Johnathan, that's not him."

"Can't I just try a different toothpaste?" Johnathan pleads. "Martha just might go for whiter teeth."

"Your teeth are white enough. What you need is some rock in your sock and some roll in your soul. Now listen up; it's now or never." You put on the song, "Tiny Dancer," and ask, "Well?"

"Yes?" Johnathan says.

"Good. Now try this one," you say as you put on "Yellow Brick Road."

"Yes," he says with a little more confidence.

"What about this?" You put on a Steely Dan song.

"No, that's not him," Johnathan replies.

"You're catching on, man," you say.

Now you've spent a whole afternoon of this and Johnathan has it down right. He can recognize Elton's old songs as well as all of his new ones, rarely making the mistake of calling other artists Elton John.

Later that night, you and a friend are at the disco listening to the sounds.

"Wow," your friend says, "Isn't that Johnathan Superstraight over there dancing with Martha, the smartest, most talented, most hip woman in town? He sure must have changed toothpastes!"

"No," you say smugly, "he's just got the concept of Elton John's music. He can discriminate between his music and other music. And he can generalize, too, responding to new instances of Elton John's songs. That's what a concept is, of course, discrimination and generalization. Now, to get good discrimination, you need to . . ."

"Someone should teach you the concept of 'the right kind of conversation for a night at the disco,'" your friend cuts in before moving to another table.

■10 Define a concept and cite an instance.

■11 Define conceptual control and cite an instance.

CONCLUSIONS

In this chapter we looked at cues that gain control over our acts when paired with the basic behavioral procedures. Such cues can either be internal or external; they can bring about acts or suppress them. We say that stimulus generalization is taking place when acts occur in the presence of new cues similar to old ones. Such stimulus generalization is most likely to occur when two cues are very much alike, whereas little generalization will occur between two cues that differ greatly – this is the Law of Stimulus Generalization. We can use a discrimination procedure when we wish to reduce the amount of stimulus generalization. Conceptual control involves both stimulus generalization and discrimination, with generalization occurring among cues that make up the concept, and discrimination occurring between that concept and other stimuli.

ENRICHMENT

Cues: Our Usage

Our treatment of stimulus control in this book differs from that of

most other authors. We use the term "cue" to replace the more wide-ly used "discriminative stimulus" — a term usually restricted to talk of reinforcement procedures and processes, especially those based on the presentation of rewards. We have chosen the word "cue" for two reasons. First, we think it is fairly easy to grasp on an intuitive level. A cue causes us to behave in certain ways; it cues our acts. Second, we're using the term "cue" to make a clean break with traditional usage where often only those behaviors associated with reinforce-ment procedures are discussed. We feel it's important to stress that a cue can be associated with acts involved in any of the six basic proce-dures (two each for reinforcement, avoidance or punishment) or the stopping of those procedures.

Cues and Cue Control

We've defined cues in terms of the procedures they've been paired with. Yet, if a stimulus is exerting stimulus control, it's cuing behav-ior, not a procedure. Is this a contradiction? We don't think so. Be-havior doesn't occur in a vacuum. A cue gains its power to exert stimulus control over acts by being paired with a behavioral proce-dure. We're merely looking at behavior as a product of its controlling relations, the events that immediately precede and follow it.

And why can't we say a cue "cues a procedure?" Using a rein-forcement procedure based on rewards, let's see why not. When it's exerting stimulus control, the reinforcement cue will increase the likelihood of some act, causing it to occur. But a cue is not able to see into the future — it can cause only a response, not the effects that follow that response. Our stimulus has become a reinforcement cue because certain acts have produced rewards in its presence in the past, rewards that may or may not continue to occur in the future. For instance, if going to parties has produced reinforcement effects in the past, an invitation to a party will cue behavior because it has been paired with a reinforcement procedure. If other conditions are normal, the cue will control your response of going to the party. But that response may produce a number of aversives this time, even though in the past it has produced rewards. This time you may get

trapped in a corner with the most boring person you've ever met, or the most critical, or the most obnoxious. Or all three! This time your toe is broken while dancing and your sweater redecorated by someone's dramatic gesture with a drink. The invitation (cue) can cause a response (going to the party) but not the effects that follow.

As you can perhaps see, we're stressing the mechanical way stimulus control works, where a cue increases the likelihood of responses, causing them to occur, or decreasing the likelihood of responses, keeping them from occurring. A cue does not "tell you a reward is available." It doesn't **tell** you anything — it controls your behavior. A big package covered with wrapping paper and ribbons doesn't cue you that you're about to receive a reward. But it is likely to cue your acts of opening the package since those acts in the presence of similar cues have produced rewards in the past.

■12 Briefly describe why we say that a cue cues behavior and not a procedure.

■13 Briefly describe why we've defined cues in terms of the procedures they've been paired with.

chapter 6
stimulus control —
verbal behavior

INTRODUCTION

In the last chapter we studied basic stimulus control, looking at how cues affect the acts that follow them, and how stimulus generalization, discrimination and conceptual control come about. In this chapter we will begin to look at another, often more complex, kind of stimulus control — verbal control — where our actions come under the control of what we and others say and write. In particular, we'll study rule and verbal feedback control, contrasting them with intuitive control, where our acts are more affected by the direct rewards and aversives they've produced than by any verbal cues. Finally, we'll discuss private verbal behavior — "thinking" — and look at the role it plays in causing us to behave as we do.

VERBAL BEHAVIOR AND STIMULUS CONTROL

Language is an unique human feature, right? Wrong. Other animals can be taught language, though most often not to speak or write like we do. Still, psychologists have taught chimps fairly complex verbal skills by teaching them the sign language of the deaf. The chimps learn to sign names of objects, ask questions, ask for food and so on. So now we don't view language as a special human quality. Rather, we now look on it as behavior — behavior controlled by cues, rewards and aversives. Language, or verbal behavior, which we'll define here as "written and spoken words," doesn't differ much from nonverbal behavior in the way it's brought about, increased or decreased. The main way verbal behavior does differ from nonverbal behavior is in how it gets its results.

Verbal behavior generally produces its results through the behavior of another person. For instance, if you ask for a drink of water, often someone will get it for you. So asking for water (verbal behavior) produces its results (getting water) through the actions of another person; it's a safe guess that your verbal request wouldn't produce a reward if nobody were around to hear it. On the other hand, nonverbal behavior produces its results through direct contact with the world. If you got up and got yourself a drink of water, that nonverbal act produces its results (again, getting water) through direct contact with the world. In this case, that contact involves walking to the faucet, turning it on, and holding a glass under the water. And no persons need to be present in order for your nonverbal response to produce that water.

The most important function of verbal behavior is its stimulus function. In other words, the things we say and write act as cues that often exert control over behavior, our own and that of other persons. Words put us in contact with rewards we otherwise might not get — or at least not without a good deal of effort. "Hey, man, can you tell me where the Bijou Theater is?"

"Turn right at the light, then down three blocks."

The first response here (asking for directions) cues the second response (giving directions). And the directions cue a reinforcement
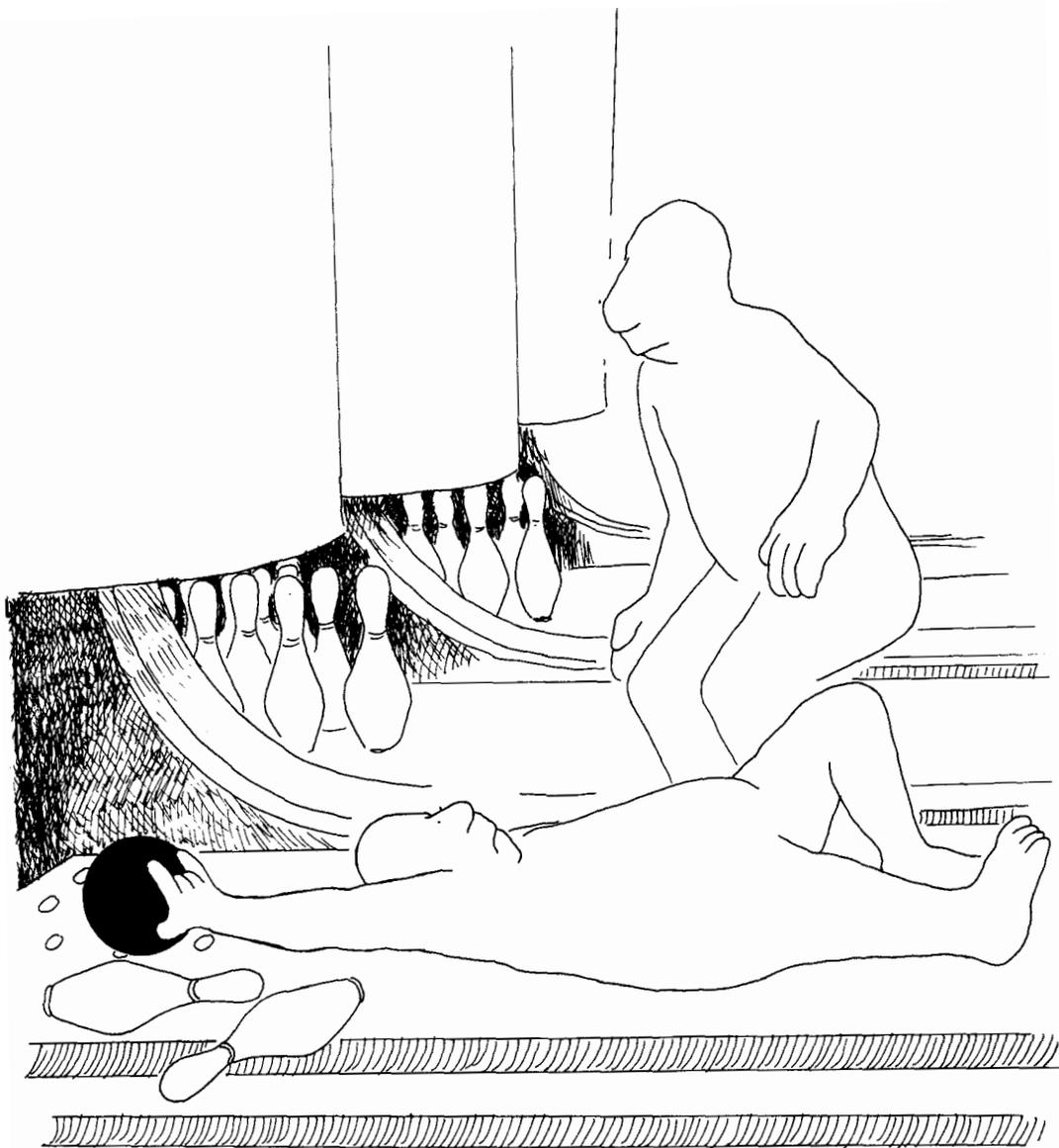
It was all intuitive up to the point where I was supposed to release the ball.

procedure: the actions of turning right at the light and driving down three blocks will most likely produce a reward — the Bijou.

"Give me another Tequila Sunrise." The waiter scurries away to fill your request. And the only muscles you had to move were your vocal cords. Pretty good stuff, this verbal behavior.

Words also act as cues to help us avoid contact with aversives. "Hey, don't go outside dressed in tennis shorts — it's almost ready to snow." This statement might serve as a cue for punishment, suppressing the act of going outside with your tennis shorts on.

How do the things we say acquire this amazing cue control? The same way as any stimuli that serve as cues: certain words are present when acts produce their effects. The words get paired with those effects and begin to control behavior in much the same way the effects themselves would. For instance, look at the two words "yes" and "no." Clearly, "yes" has preceded our acts many times when they produced the effects that made them more likely. (Yes you can have some cake. Your turn at the phone. A helping hand.) On the other hand, "no" has been present when acts produced effects that made them less likely. (No, you shouldn't put your fingers too near a hot stove. Kick sand at the beach bully. Leave the house without Mom and Dad's okay.)

Soon "yes" comes to cue reinforcement procedures, while "no" comes to cue punishment procedures. We're not very old by the time our actions have produced enough effects in the presence of the words "yes" and "no" that these words exert good cue control over our actions. Other words gain control over our actions in much the same way.

Certain words gain and keep their power to control the occurrence of acts by the rewards and aversives those acts produce or avoid when the words are present. "There's the ice-cream truck!" your friends says. A cue that causes you to turn around; and sure enough, there it is, in all its calorie-defying glory. "Wow," you say as you dig through your pocket for change, "thanks for saying something. I might have missed it!" Verbal behavior plays an important role in our lives. Its power to exert cue control over our actions keeps us from missing life's rewards — like your friend's response that saved you from miss-

ing the ice-cream truck. And it also keeps us from coming into contact with aversives — like your friend's warning to watch out as you are about to step in the path of that same ice-cream truck. Later, we'll look at verbal behavior more closely when we discuss rules.

- 1 State the most important function of verbal behavior.
- 2 Describe how verbal behavior and nonverbal behavior differ.
- 3 Describe how words gain stimulus control over actions (for instance, how does the word "no" come to suppress acts).

RULE CONTROL AND INTUITIVE CONTROL

Rule control is an important type of cue control where rule statements cue certain acts under certain conditions. For instance: when it's raining (occasion), put on your raincoat (act), or you'll get wet (aversive). This rule is a cue for an avoidance procedure — putting on your raincoat prevents you from getting wet. This instance also shows the three features of a rule, which are an occasion, an act and the effects of the act.

Rules: statements that describe (1) the setting, occasion or cues, (2) the response, and (3) the effects of that response.

Sometimes, however, a rule may only imply one or two of the three features without stating it. For instance: don't eat green apples or you'll get sick. This rule only **implies** the occasion — that is, at all times and places you shouldn't eat green apples. But still the rule is a clear cue for the punishment procedure — eating green apples (response) will produce sickness (aversive). When rules govern our acts, we say they're under **rule control**.

Rule control: the control of acts by rules.

Mothers tell their young children not to play in the street because a car might hit them. This is a rule — a statement that describes the

action (playing), the setting or cues (street), and the effects of the action in that setting (getting hit by a car). Here's another instance of a rule: study hard at college so you'll learn worthwhile things and have a better life. This rule statement cues actions that are likely to produce rewards.

Often our actions are more efficient when rules control them. We don't have to get rained on, get sick on green apples, get hit by a couple of cars, or flunk out of college before learning to do things right.

- 4 Define and cite an instance of a rule, identifying each of the three parts.
- 5 Define rule control and cite an instance.

INTUITIVE CONTROL

We also have another form of control, but we can't call it rule control because our acts are more caused by their past rewards or aversives, instead of by verbal cues. Loosely speaking, we say we're acting according to our "intuition." So we will call this type of control **intuitive control**. And we'll use this term to describe acts under the control of the direct rewards and aversives they've produced in the past, without the aid of rules. For instance, the behavior of many athletes is under intuitive control. In doing a good butterfly stroke, a swimmer intuitively moves her arms and legs, in the correct way and breathes at the right time. And this is because of the past aversives and rewards her movements produced, like water in the mouth when she breathed at the wrong time and lungs full of fresh air when she breathed at the right time.

Intuitive control: the control of acts by the rewards and aversives that normally follow those acts, rather than by rules.

Dr. Harper teaches psych at BSU (Big State University), and next to his job, Harper's greatest love is bowling. Often, he talks about it so much that his students seem sick of the subject and begin to

follow his remarks with social aversives, which suppress the outright bragging but not the sneaky, undercover kind. For instance, he won the BSU Bowling Championship during the semester. And since the class's aversives suppressed bragging about it, Harper gave a lecture on intuitive control instead, explaining that an expert bowler (like himself) didn't need a set of rules to throw a strike (. . . and he'd made several the day before. In fact he made two turkeys . . .). The position of his arms and legs in his approach resulted from the rewards and aversives other throws produced. His throws that produced rewards, those getting strikes and spares increased the likelihood of all the actions involved with the throws. On the other hand, throws that failed — those that produced gutter balls, brooklyn splits and so on — decreased the likelihood of the actions involved with those throws.

Harper then said not to forget that intuitive control is mainly the control of acts by their direct rewards and aversives, though some cues are paired with the acts when they produce those direct rewards or aversives. So someone asked him what cues were involved in a throw, and he said they were not easy to identify, as is often the case with intuitive control. But he pointed at each of these things as instances of such cues: the sight of the ball in front of him, his distance from the tape as he approached, the position of his thumb in the ball (straight-up helps avoid hooks and curves), the general "feel" of his body position as he makes his approach and throw. Those and many other such cues are involved in the "simple" act of throwing a bowling ball. For a skilled player, intuitive control governs most of the features of the response sequence.

Actions under intuitive control sometimes start under rule control. Then, the direct effects of those actions take over, and the type of control shifts to intuitive control. For instance, when Harper learned to bowl, rules cued certain actions: three step approach, thumb up straight, wrist curved out and so on. But the longer he bowled, the more the cues paired with direct rewards and aversives controlled his actions: the "feel" of a good approach, a good hold, and a good throw.

Here's a personal instance of rule control shifting to intuitive

control. When we began working on this book, we became concerned about writing style. We wanted to keep the style clear and simple, using short words and short sentences. So that was our rule: short words and short sentences (or many aversive rewrites).

At first it took a good deal of effort to follow the rule, since we were used to writing in a different way — simple writing didn't come easily. So, for a while, progress was slow and editing frequent. Then, after a month of hard work, we began to find it easier to use short words and sentences. Rule control was shifting into intuitive control. The direct rewards from a sentence that followed the rule began to gain control. Now it's much easier to write short sentences, since intuitive control developed as a result of practice.

- 6 Define intuitive control and give an example.

VERBAL FEEDBACK CONTROL

If I have my sweater on backwards, I want you to tell me. And if my hair looks great when I try it a new way, tell me that too. If I write a bad term paper, tell me what's bad about it. Please, don't keep me in the dark; don't let me make a fool of myself — give me feedback. And for heaven's sake, don't let my triumphs go unnoticed either — give me feedback.

Feedback statements are those where others tell us (or we tell ourselves) what's right and what's wrong with our acts, what features of our acts are likely to produce rewards or aversives. We're acting under **feedback statement control** when such statements serve as cues for our acts, either keeping the form of the acts pretty much the same or causing a change in their form.

Feedback is much like a rule for our future behavior based on how we're acting now, telling us to change or not to change, and often in what way to change. For instance, when you're learning to play tennis, your teacher tells you how to hold the racket — that's a rule. But your teacher may also tell you you're twisting your wrist too far to the right — that's feedback, because it's based on what

you have done in the past. All your grades in your classes are also feedback, based on what you've done. Feedback statements are simply more specific to your acts than rule statements.

Feedback statement: a statement about the form of a previous act that points out the correct or incorrect features of that act.

Feedback statement control: the stimulus control of the form of acts by feedback statements.

You say I haven't been acting like my normal, cheerful self lately, that I've been nagging you too much? Sorry. I'll try to be more positive, less of a drag. And I've got some feedback for you too; I like the way you've been bringing up things that bother you, discussing them calmly, instead of blowing up or splitting. Keep it up.

Feedback. We get it from many sources, for many acts, as part of our jobs and our personal relations. And we give feedback, too. But most of us don't give nearly enough feedback, letting others' good acts go unnoticed, or letting them repeat their same mistakes time and time again, just because we're not assertive enough to give good feedback.

Feedback statement control serves two main purposes: either increasing or maintaining the form of your acts, or decreasing or changing the form of your acts. **Positive feedback** is geared toward maintaining your acts or making them more likely; **corrective feedback** is geared toward changing your acts or making them less likely.

Positive feedback: feedback statements that tend to maintain acts or make them more likely.

Corrective feedback: feedback statements that tend to change acts or make them less likely.

You say you liked the way I let each of my staff members comment on the new project at the meeting? Good, I'll run the meeting that way in the future then. But you didn't like the way I let them

interrupt each other? OK, I'll try to keep things under better control the next time.

You may think that positive feedback is the same thing as a learned reward and that corrective feedback is the same thing as a learned aversive. But that's not quite it. Feedback statements may be rewarding or aversive, but feedback differs from a simple reward or aversive in one major way: feedback often functions as a **cue** for future actions. A failing grade is a learned aversive, no doubt, but it's also likely to be corrective feedback — a cue that you had better stop goofing off. A good grade is a learned reward, true, but it's also likely to be positive feedback — a cue for maintaining whatever acts produced that grade. Positive and corrective feedback clearly play major roles in helping us get rewards and avoid aversives.

- 7 Define feedback and cite an instance of it.
- 8 Define feedback control and cite an instance of it.
- 9 Describe how feedback control and rule control are alike, how they differ.
- 10 State the major function of feedback, which makes it different from simple learned rewards and aversives.

VERBAL BEHAVIOR AS A RESPONSE AND A CUE

Earlier we said that the most important function of verbal behavior is its stimulus function. But your behavior can serve as both a response and a cue. Your smile (a response) will often cause (cue) someone else to smile back at you, so it's both a response and a cue. Raising your hand in one of your classes (a response) will often cause (cue) the teacher's act of calling on you, so it's both a response and a cue.

Your verbal behavior very often serves as both a response and a cue, probably more often than your nonverbal behavior. We already saw that the things you say can come to cue acts (your own and others) when words get paired with behavioral procedures. People will often try something new if you tell them it's good — your words are cues for reinforcement procedures. Or if you tell them not to do

something, they often won't try it — your words are cues for avoid-
ance procedures. And if you tell them what they're doing is wrong,
they'll often stop it — your words are cues for punishment proce-
dures.

As we said, words are **responses** as well as cues. And how do these
responses come about, maintain or stop occurring? By the effects
they produce — the rewards or aversives they present, the rewards or
aversives they remove, the rewards they prevent from being removed,
and the aversives they prevent from being presented. For instance,
you can tell someone to see a movie you liked (verbal response), and
they thank you for telling them it's in town, saying they'll see it the
first chance they get — reinforcement effects, social rewards, for
your verbal response. But, of course, if instead of thanking you, your
"friend" tells you the atrocity of your advice was only exceeded by
the amount you give, you'd be much less likely to speak up the next
time around — due to the punishment effects for your verbal acts.
Avoidance effects also affect the things you say — i.e., you tell the
driver of the car you're in that the two of you are headed for a crash,
causing him to swerve and avoid the 60 mph presentation of a two-
story garbage truck.

■11 Cite an instance of a verbal response that is also serving as a cue.

PRIVATE VERBAL BEHAVIOR

Talking is behavior and it's controlled by its effects and the cues
paired with them. Now, what about "thinking"? Many people treat
thinking as if it differs from other types of acts, as if it's the opposite
of "doing." But thinking is **behavior,** like talking, like walking on the
beach, like driving to work — and like talking, walking and driving,
behavioral effects and cues control thinking. But, as we said before,
"thinking" isn't closely tied with the term "behaving," so from here
on in, we'd prefer to use "private verbal behavior" or "talking to

ourselves"; these terms are more clear since they describe what think-ing is.[1]

Many of your acts have cue control over the acts that follow them — like dialing a telephone number for instance. When you fin-ish dialing the first digit, there are cues present for dialing the second digit, and so on. In other words, completing dialing one digit cues dialing the next. Your public acts can also produce cues that cause certain types of private verbal acts to occur. Suppose you trip over your feet while walking through the library; this may cause you to silently call yourself "oaf" as all eyes rivet on you.

And just as public acts can cue your private verbal behavior, so can your private verbal behavior cue your public acts. Remember when you learned to drive a car with a clutch? Your teacher first told you when and how to shift and use the clutch. Then, as you began to drive the car, you repeated these verbal cues to yourself when cer-tain public cues occurred. You told yourself where reverse was, and then you shifted into that gear. Then you may have told yourself how to let up the clutch — smoothly and slowly — while at the same time you pressed the gas pedal. The smooth path you made out of the driveway was a reward for these acts. On the street, you told yourself to press in the clutch again, and this cued doing so. Next you told yourself to shift up and to the right. After you'd shifted, you told yourself how to release the clutch. And so on.

As we've said, talking to yourself can work in much the same was as talking to others — it helps cue acts. The person teaching you how to drive could have given you the same cues about operating the shift and the clutch that you gave yourself. Or you could have given someone else the instructions for directing her driving. In any case, the words, public or private, served as cues for the correct acts.

■12 State what controls the act that people call "thinking."

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[1] Imagery, or "imaging" also falls within the category of "thinking" along with private verbal behavior. Like talking to yourself, imaging is **behavior** and can cue other private and public behaviors.

■13 Correct this statement: Thinking is a special activity, much different from the other things we do.

■14 Why do we use the term "private verbal behavior" instead of "thinking."

■15 Cite an instance of private verbal acts cuing public acts.

PRIVATE VERBAL BEHAVIOR AND RULES

In an earlier chapter, we discussed rules and rule control. A rule, we said, is a statement describing a cue, an act and the effects of that act. And rule control is simply the control of acts by rules. When you talk to yourself, you can state rules. And if your behavioral history is right, you can bring your own behavior under the control of these self-stated rules. The people in your world help you develop this skill by providing strengthening effects for your behavior when you follow rules. Then, when your behavior is under fairly good control of many rules, the rule control exerted by others may generalize, so that rules you give yourself will cue your own acts. But before such generalization can occur (that is, before you can state rules to yourself and follow them) you most likely receive a great deal of training from others for following rules, though it isn't likely that you'll be aware of that training. Now let's look at an instance of self-stated rules.

You and a friend walk through the door of The Little Sin, a bakery known for its old-world pastries (made of 97% refined sugar and hydrogenated fat, plus the 3% minimum daily requirement of salts and preservatives). Anyway, you've just stopped in to get a loaf of whole wheat bread, since you're trying to be careful about maintaining a healthy diet. But the flesh is weak, and you're drawn to the case filled with many kinds of sweet things, your mouth beginning to water. The cue control is there; you reach for your wallet, as your friend, Harry Healthy, walks up behind you. "Hey, what kind of diet did you say you were on?" he demands.

"A seafood diet," you answer. "I see food and then eat it."

"Not very funny, And neither are the things that will happen to your metabolism if you eat that kind of junk — like hypoglycemia, like diabetes."

Harry Healthy gave you a rule — eating junk food will most likely result in poor health sometime in the future. And you have a strong behavioral history for following good rules, so your friend's rule serves as a cue to suppress your act of buying a pastry. By resisting temptation you've avoided the aversive of having Harry call you weak-willed. You feel good, you feel moral.

But then comes the acid test — when you return to the bakery all alone, with nobody around to disapprove of you if you slip. Will you buy more than the Krunchy Kelp TV snacks you came in for? Maybe not, for even though your friend is no longer with you, the whole setting may cause (cue) you to give yourself his rule. You may say to yourself something like, "I can't buy any junk food; everything it contains is bad for me; I'd be a traitor to my cause, a jellyfish because of a jelly doughnut." And your own statement may suppress buying a pastry in the same way your friend's did a few days before — by exerting cue control over your acts.

So now you've seen how private verbal behavior can work, cuing other acts. But we don't want to over-stress the role private verbal behavior plays in controlling our acts, because much of the time, outside, or public, cues control what we do. For instance, if the phone rings, we don't tell ourselves to pick it up before we can do it — we just pick it up. Or if someone says hello to us, we don't tell ourselves to say hello back — we just say it.

- ■16 Can we follow rules we give ourselves?
- ■17 What kind of behavioral history must we have had with rules to be able to follow self-given ones.
- ■18 What general kinds of cues control our acts most of the time, public ones or private ones?

CONCLUSIONS

In this chapter we began our discussion of verbal stimulus control. The most important function of verbal behavior is its stimulus function, or cue function. Words come to cue acts if they are present

when those acts produce behavioral effects. Two kinds of verbal cue control are rule control and feedback statement control. A rule is a statement describing an act, an occasion and the effects of the act. A feedback statement is one that points out the correct or incorrect features of an act. In contrast to rule and feedback control, intuitive control is the control of acts by cues paired with the direct rewards and aversive acts produced, rather than by verbal cues.

Along with its cue function, the things we say are also behaviors, brought about, maintained or suppressed by the effects they produce. And the things we say to ourselves, the things we think, are also behaviors — private verbal behaviors that can cue others of our acts, both public and private.

ENRICHMENT

Private Verbal Behavior

Private verbal behavior is maintained by its effects, just like public verbal behavior. Yet this need not mean, that what you say to yourself is the same as what you'd share with the rest of the world, but rather that both public and private verbal behavior are a result of the effects they produce.

Others would provide aversives for some statements that don't produce punishment effects when we say them to ourselves. It would be all right to say to yourself that your boss is a jerk, although that same statement wouldn't be as well received if you said it to your boss. Or if you find someone sexually attractive, you may make statements to yourself that would cause even the gang in the locker room to respond to your preversions with jeers and mockery. So in this sense, private verbal behavior is often more "free" than public verbal behavior, because its contact with social rewards and aversives isn't as direct as with public verbal behavior.

The words you use when talking to others might also differ from those you use when talking to yourself. For instance, if you spend time with children, you may use simple words and phrases, those

that are easy for them to respond to, although you may revert to more "adult" language when talking to yourself. Or if you're speaking a second language to others, you may revert to your first language when talking to yourself, since it has produced more reinforcement effects.

And you may not repeat yourself when you're thinking as you often must when you're talking — it's that clear you will "know what you mean." For the same reasons, you may skip unneeded details when talking to yourself, since there's not much chance you'll misunderstand because you've "left something out." And in that sense it's sometimes nice to be your own listener as well as the speaker, in that you're "both" sharing the same behavioral history and current cues.

So the controls on your private speech differ somewhat from those on your public speech. You talk to Mom and Dad one way, another way to the gang, and another way to yourself. Yet, all in all, what you say to yourself doesn't differ too much from what you'd say to others, at least not most of the time. Private speech comes about due to public speech; so when you talk to yourself, you will keep the public speech patterns that have produced the strongest rewards from people around you. And you'll be less likely to keep private speech patterns that have produced strong aversives on the public level, unless of course some other strong rewards are maintaining them.

▪19 Private and public verbal acts are both brought about and maintained by their _____.

▪20 Is what you say to yourself always the same as what you'd say if other people could hear you?

▪21 Why might you think bad things about people but not say those bad things aloud.

Nonverbal Feedback Control

In the main text we talked about feedback statement control, the control of acts by feedback statements. We'd like to point out that

feedback can be nonverbal, too; in other words, feedback doesn't have to be written or spoken.

Nonverbal feedback — that murderous look Mom gives Junior in church when he's squirming around in his seat and making his program into a paper hat.

Nonverbal feedback — that warm smile from your best friend after your first big oral report in class, letting you know what a great job you did.

We have learned many ways of giving nonverbal feedback — smiles, frowns, raised eyebrows, and hand gestures, to name a few. And like verbal feedback, we can class nonverbal feedback as either positive or corrective, with positive feedback tending to maintain acts or make them more likely, and negative, or corrective, feedback tending to change acts or make them less likely. And, of course, both verbal feedback and nonverbal feedback come to exert cue control in the same way — by being present when acts produce their effects.

■22 Give an example of nonverbal feedback.
■23 Describe how nonverbal feedback can come to exert cue control over acts.

The Blind Gunner:
A Fable Showing How Feedback Differs from Rewards and Aversives

The purpose of this fable is to show that the same event can have two separate functions: it can be a cue and at the same time a reward or an aversive. For instance, a compliment from your teacher on a paper you've written will probably be a social reward, but it's also likely to be a cue for acts that "keep up the good work."

Positive feedback will often be both a cue and a reward. Corrective feedback will often be both a cue and an aversive. If you wish to increase or decrease specific behaviors by giving feedback, it's important that you can separate the two functions. For example, suppose you are a teacher grading student essays. You come across a paper you feel is very weak, so you decide to give the student some corrective feedback. Your first impulse may be to scrawl "a piece of trash"

over the top of the paper. But, because you know so much about behavior principles, you realize that such an act wouldn't serve as a good cue for the kind of behavior you want to see. In fact, that comment might be so aversive that the student will simply drop your course, in which case you wouldn't have the chance to teach her anything. So, you end up making several comments on the paper, pointing out specific weak points, stating why they are weak, and perhaps giving suggestions on how the student could improve the paper. This kind of corrective feedback may still be somewhat aversive to the student, but it's much more likely to change her behavior.

Next you come to a pretty good paper. So do you write "a pretty good paper" on the top and go to the next one? No, you make your feedback statements so that they are clear cues as to what parts were good and what parts weren't as good. In this way, the student will be more likely to maintain his good work, while changing the parts that aren't as good.

Now, we'll begin our fable, which we hope will help you learn to analyze the separate functions of feedback so that you can use it most effectively.

★   ★   ★

Once upon a time, there was a blind man who had a cannon. He could turn his cannon 360°, and then blast the hell out of anything in his path. He also had a friend, the spotter, who flew above the target in her helicopter. She would radio back, giving the gunner feedback on the accuracy of his shot. But she, too, was nearly blind, so she could only tell him whether he had hit the target or was to the right or left of it, though she couldn't say how far to the right or left.

Now that we've set the stage, let's proceed. The gunner fires his first shot of the day in a direction he knows not, toward a target whose location he knows not. The spotter shouts this feedback into her mike: "Your shot was to the left of target." So the gunner turns his cannon 90° to the right. Then he blasts off another shot. And the feedback comes crackling over the radio, "Still to the left of target."

This time the gunner turns the gun 45° additional degrees to the right, and then blasts off. Feedback: "Now you're to the right of the

target." So the gunner cranks backward, moving the cannon 22½° to the left and blasts off again. "Too far to the left again." And 12¼° to the right — caboom! "On-target, but you almost hit me," comes the feedback, laced with static.

"Oh, hot rats!" the gunner cries in joy. The gunner and his buddy return to their barracks for a few well-earned rounds of Bear Whiz beer, satisfied with having done another worthwhile day's work. But the next day, the gunner takes just as long to find his target as he has for the past 1000 days he's held his duty.

Moral: Human beings — even warm, loving, intelligent human beings, like the blind gunner — can receive tons of feedback without the feedback acting as a reward for the response that feedback cues or guides.

Why didn't the feedback function as a reward to increase the accuracy of the gunner's response? Because events were never the same on the next days. In other words, the cannon and the target were always placed more or less randomly in relation to each other each day. So the feedback that the cannon was too far to the left on one day should not increase the likelihood of the response of moving the cannon to the right at the beginning of the next day since that might not be the correct move on that next day. On the other hand, if the cannon and the target were always in the same positions relative to each other at the beginning of each day, then we might expect that the feedback would also serve as a reward to increase the accuracy of aiming on successive days.

We should mention that the feedback from the spotter does act as a reward for one particular response sequence — namely, the response sequence of turning on the radio and listening to it — **the response that allows the gunner to hear the feedback.** We sometimes call this the "observing response." So if the gunner makes that listening or observing response, it's most likely because the feedback also works as a reward for that observing response. But the feedback may not work as a reward for the response it describes — the response guided by the feedback — aiming the cannon, in this case.

We should also distinguish between the way the observing response (listening to the radio) and the way the guided response (the

gunner's response after the spotter's feedback) cause that feedback. Here is the distinction: some of the features of the guided response control the nature of that feedback. For instance, the direction of the gunner's shot relative to the target (the guided response) controls what the spotter reports (the nature of the feedback). But listening to the intercom radio (the observing response) has no effect on what the spotter reports (the nature of the feedback). So features of the guided response affect the details of the feedback; the observing response does not. Though slightly farfetched, the fable shows that your actions produce stimuli that can serve two functions — both the feedback type of cue function and the reward function. Those two functions are logically distinct, though most often (if not always) they occur together.

As we said before, you may often wish to make those two functions as distinct as you can when giving positive or corrective feedback, when you're telling a person that his performance is or is not correct. Especially when giving corrective feedback, you may want your feedback to be as nonaversive as possible. You simply want to guide the person as to how he or she can improve the next time — a difficult distinction, but one that you can make more easily with a nonemotional, gentle, tactful style when you give corrective feedback.

- ■24 In this story, what was the one response of the gunner that the spotter's feedback served as a reward for?
- ■25 Which response, the guided response or the observing response, affects the nature of feedback?
- ■26 The cue function and reward function are logically distinct, though most often they _____.

chapter 7
stimulus control—
imitation

INTRODUCTION

In this chapter we'll look at imitation, another kind of complex cue control. When we imitate people, their acts are serving as cues for the same sorts of acts on our part — acts that match the form of the cue. Imitation is easy to see when we watch young children, as they imitate Mom, Dad, Sister, Brother, and sometimes even Doggie or Kitty. Why do they imitate? We'll be looking at the answer to this question. And we'll also see that our actions are still under imitative cue control as we grow older, whether or not we know it's occurring. But before we study imitation, we'll look at the two types of rewards

and aversives, built-in or added — a distinction that will later help us understand the different theories of imitation.

BUILT-IN AND ADDED REWARDS AND AVERSIVES

Before we deal with imitative behavior, we will look at the two types of rewards and aversives acts can produce, either built-in or added. Later, in the "Enrichment" section, these types of rewards and aversives will help us understand two of the main theories of imitation.

In a behavior analysis events that we must look at closely are those that follow acts. The key to increasing the likelihood of acts we want, you'll recall, is through either a reinforcement procedure or an avoidance procedure. And to narrow it down even further, it's best that the desired act produce a reward. Some results of behavior may be neutral — neither rewarding nor aversive. Our task is to be sure that the acts we want to make more likely do indeed produce rewards, and that the acts we want to make less likely either don't produce rewards (extinction) or do produce aversives or remove rewards (punishment procedure).

There are two ways a stimulus or event can follow an act. One way we'll call a built-in event. A built-in event following an act is on where an act and its outcome are bound together, so that you aren't likely to have one without the other. The action of eating and the following event — getting food into the body — is an example of such a pair of events. Another example is washing pots and the resulting clean pots. Again, if the result of a bound pair of events is rewarding, we call the reward "built-in," because the reward automatically follows the behavior. The behavior produces the reward in a mechanical sense. And aversives that automatically follow some act are built-in aversives.

Built-in rewards and aversives: rewards and aversives that automatically follow acts.

Often the events that follow an act are neither rewards nor aver-

sives, so they don't make the acts that produced them either more or less likely. Such outcomes are neutral, but they can become rewards and aversives if they are paired with events that are already rewards or aversives. For instance, the built-in event following washing pots is clean pots, but no reward or aversive is involved until the act of washing pots produces some other result — such as praise, or the end of nagging.

There is an advantage in making the built-in outcomes of desired behavior rewarding: every time the act occurs it automatically produces a reward. For example, if you made "correct answers" rewarding for a child doing arithmetic, the child would come home from school and do arithmetic "for fun," for the built-in rewards of producing correct answers. This is exactly what some children do — they come home and "play school." In playing school, you'll notice the children often do very easy school work — for instance, workbooks from an earlier grade. Thus, they get all the answers correct and many rewards for very little effort. This is not a waste of time, though, because it increases the likelihood of the particular correct acts and also the general class of arithmetic behavior.

"Getting the right answer" is a very, very large number of acts that are members of one response class. They all belong to the class because they are all acts which produce the same event or result: "right answers," a response class which has been paired with many rewards, such as smiles, pats and privileges.

We have been talking about built-in events that follow behavior, those events that automatically follow certain acts. Sometimes the outcome of behavior is an unlearned reward — like the event of "getting food into the body" is an unlearned reward for the act of "eating." Sometimes the event following behavior is neutral, though it can become a reward or aversive through pairings with other events that are already rewards and aversives. Such built-in rewards and aversives cause several problems for persons interested in changing behavior. First, an act that produces an unlearned, built-in event (for example, food intake produced by eating) can't extinguish because we can't let the act occur in the absence of the reward. If eating occurs, rewards will follow. Smoking and excess drinking present the same

problems, and clearly, all of these behaviors are serious problems for many people who are hooked on those rewards — and for those persons who try to help them. Even so, behavior analysts — along with others — have found ways of getting around unlearned built-in rewards, as we'll see later.

A second problem is that if the built-in event that follows a desired act is a learned reward, it can just as easily become a learned aversive. Do you recall a time in your younger days when "answering right" resulted in catcalls and hoots from your friends in school? If not, you're lucky. Many children's actions in school change greatly at about the time their friends become more rewarding to be around than their parents. Right answers become aversive if the child's friends supply aversives along with them. In any case, a built-in event that is a learned reward may sometimes have to be paired with some other rewards, such as good grades, good jobs or praise, if the built-in reward is to remain rewarding. And the same thing is true with built-in aversives — they too must be paired with other aversives, such as bad grades, no jobs, or disapproval, if the built-in aversive is to remain aversive.

A third problem with built-in outcomes is that if the immediate events that follow an act are aversive, people will quit acting that way, even though they may miss some "big" rewards that are only available if they hang in and keep making the response. Take jogging, for example. At first, the only events that follow jogging are shortness of breath and tired legs — aversives for most people. These aversive events make jogging less likely. But the only way that jogging will reap rewards is if it occurs for enough days that the leg muscles become stronger and the respiratory and circulatory systems adjust.

We have been discussing built-in rewards and aversives, one kind of event that follows an act. We have seen that built-in events are automatic changes in the world resulting from behavior. They may be unlearned or learned rewards, unlearned or learned aversives, or neutral events — neither rewarding nor aversive. The other kind of events that follow behavior are added rewards and aversives, or added neutral events if they have not been paired with other rewarding or aversive events. Like built-in rewards and aversives, added rewards and

aversives may be either learned or unlearned. But their relation to be-
havior is **arbitrary** in the sense that the act doesn't necessarily pro-
duce the events. Added outcomes require the presence of another
person.

Added rewards and aversives: rewards and aversives that have an ar-
bitrary relation to the acts that produce them.

Social rewards and aversives are added outcomes. They not only
require the presence of a second person, but the second person must
engage in certain acts immediately following the first person's re-
sponse. In other words, they must present or remove some event. Al-
though social rewards and aversives are always added rewards and
aversives, they are often delivered as consistently as built-in rewards
and aversives. Think about the child in the classroom making weird
noises with her mouth. You can be sure that almost every time they
occur, her acts will result in the teacher's attention and probably the
attention of some of her classmates.

Perhaps you can see that learned, built-in rewards and aversives
would almost always depend on their pairings with **added** rewards
and aversives, such as praise and smiles or disapproval. The same re-
ward, for example food, can be a built-in or added reward. It is an
unlearned built-in reward when it is produced by the act of eating.
But it is an unlearned added reward when it is produced by arithmetic
acts or jumping-rope acts. When food is an added reward, it is pro-
duced by one person's acts only if a second allows it or cooperates in
making the reward available. And as the case with rewards, the same
aversive can often be either built-in or added.

The entire fabric of our social world is held together by added re-
wards and aversives. To the extent that other people have some con-
trol over the rewards and aversives controlling our behavior, and we
have some control over their rewards and aversives, we become a
social unit. To the extent that built-in rewards and aversives control
our actions, we are "independent," even if the built-in rewards and
aversives have been learned through earlier added rewards. One prob-
lem many people have is that almost none of their acts are main-

tained by built-in rewards. They are often called "too dependent." Other people are called "too independent," because we seem to have little effect on them no matter what we do. They march to the beat of their own drummer.

- 1 What are built-in rewards and aversives? Give an instance of an act that has a built-in reward and one that has a built-in aversive.
- 2 What is a neutral outcome?
- 3 What is the advantage to making the built-in outcome of a desired act rewarding?
- 4 What is a possible problem coming from acts that produce an unlearned, built-in reward? Give an example of such an act.
- 5 The authors state that the built-in learned reward can become a built-in learned aversive. Describe the problem that results from this when children who give many right answers to questions in school come under the influence of friends who provide punishment effects for giving the right answers.
- 6 Give an example of an act that produces a built-in aversive at first, even though that act is likely to produce "big" rewards in the future. What problems may occur because of these immediate, built-in aversives?
- 7 What is the relation between an act and its added outcome?
- 8 Give an example of an added reward and an added aversive.

IMITATIVE CUE CONTROL

Next door, two teenagers chase each other around the yard, dousing one another with buckets of water, laughing, having a good time. And standing alone in his own back yard, three-year-old Chet looks on, laughing with the teenagers. Laughing because they laugh. Imitation.

Later that day, Chet is playing in the living room with his one-year-old cousin. Time for a new game. He leaves the room for a minute, then returns with a glass full of water and a big grin. He looks around at his audience — his aunt, his uncle, his mother, his father. And though they ignore him, he begins his new routine anyway.

Splash! His little cousin gets it in the face. Imitation.

Little Chet laughs. Just like the big kids did. Imitation.

He looks at his cousin. She's screaming. He looks at the grown-ups. They're shouting at him. Where are the laughs? Where are the added social rewards of approval he should be getting for sharing this good time with everyone? He's been cheated.

★   ★   ★

Big Chet wakes up from his afternoon snooze to see little Chet emptying his pack of Kools, three of them now lying broken on the carpet, and one in little Chet's mouth. Imitation.

"That's my boy," Big Chet says, beaming. "Someday you can smoke grown-up people's cigarettes — just like Daddy" (an added reward for little Chet's acts).

★   ★   ★

Little Chet swears.

"Now where do you suppose he learned that, Carol?" Big Chet asks his wife.

"He learned it from you," Carol answers.

"We'll just have to watch what we say around him from now on." And then the father turns to his son: "Don't you ever say that again, you little creep, or I'll kick your rear end up to your shoulders!"

★   ★   ★

What is imitation? We say little Chet is imitating his dad when he acts like his dad, after seeing or hearing him act in a certain way. We say imitation occurs when the son's actions match the form of his father's, when Big Chet's actions serve as cues for little Chet's actions.

For instance: Big Chet walks by the coffee table, picks up a small brown object, and pops it in his mouth. Little Chet just happens to pick up one of those smeary brown things too. He pops it in his mouth. Candy!!! Great!!! A built-in, unlearned reward for imitating. Now the father's actions will start becoming more of a cue for his son's actions, since matching them produced a reward for little Chet.

And so, when "Green Acres" is over, Big Chet puts down his
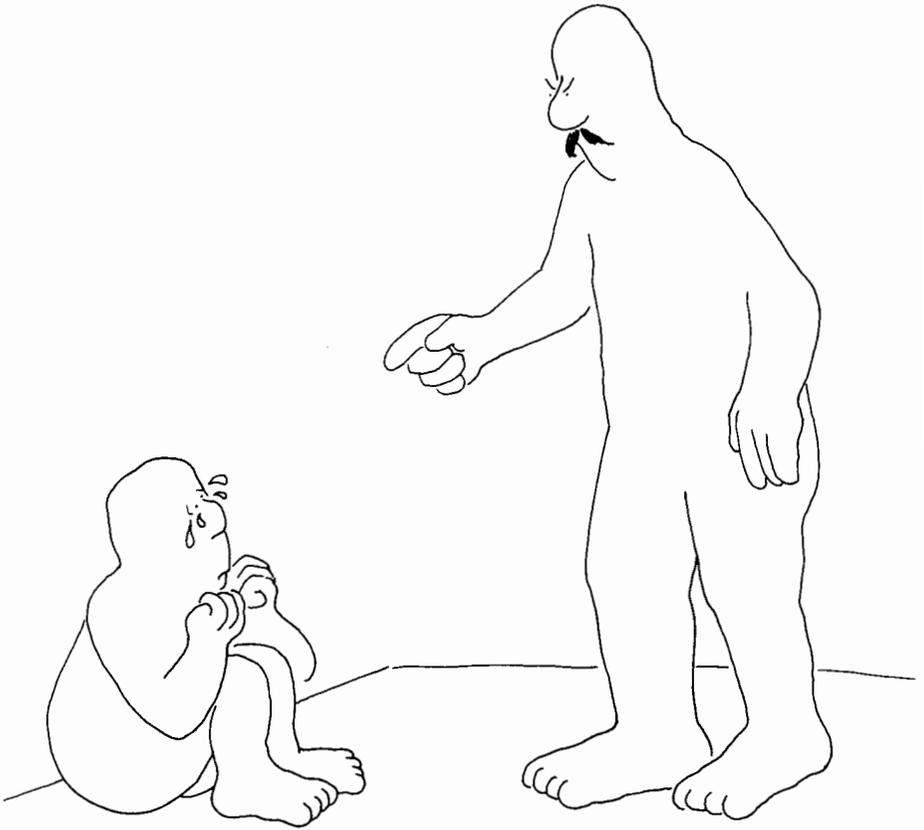
Don't you ever swear like that again you little @*&%@*†, or I'll kick your †%&*!* up between your ??2*!!%& ears.

empty beer can, walks over to the TV, puts his hand on the control, and turns it off, before going to the kitchen for another can of Bear Whiz beer. Playing around the TV, little Chet happens to hit the "on" switch. Instant music and bright colors, as a $1,000-a-second commercial flashes on the screen. Noise and motion!!! Another built-in reward. The father's actions are becoming a stronger cue for his son's actions.

Carol, little Chet's mom, sits down at the piano to play a medley of her old favorites, "Nearer, My God, to Thee" and "The House of the Rising Sun." Afterwards, little Chet happens by the piano and starts pounding on the keys. Noise!!! Music??? A built-in reward (at least for him). Mother's actions are also becoming a cue for her son's, since matching them produced a reward.

So how does imitation develop? Well, imitation is a form of cue control, so it develops just like any other form of cue control. Cues cause certain acts to occur because those acts have produced rewards or gotten rid of aversives in the presence of those cues. And imitative cues cause acts that are like those cues to occur; in other words, the form of the response (what it looks like or sounds like) matches the form of the cue (what the cue looks like or sounds like). Why? Because those imitative acts have produced rewards or gotten rid of aversives in the presence of those imitative cues.

Imitative cue control: a type of cue control in which the form of the response matches the form of the cue.

We learn to imitate the acts of others because of the rewards these imitative acts produce. And these rewards often take place naturally, meaning another person doesn't have to always follow the response with a social reward or any other type of added reward. The reward is built in to the imitative act. By imitating their parents, children learn to better deal with their world, learn to get rewards and avoid aversives. So apart from the added social rewards — the smile — little Chet gets for acting like Daddy and Mommy, he also gets other built-in rewards — like chocolate, when he imitates Daddy

eating it, like TV when he imitates Dad turning it on, and like noise when he imitates Mom playing the piano.

Most imitative acts at first occur right after the imitative cue. Carol says, "Patty cake," and baby Chet says, "Patty cake." Immediate imitation. Carol scolds little Chet for spilling water when he tries to fill the GI Joe canteen. And little Chet scolds GI Joe in turn. Immediate imitation.

But later imitation can occur to cues that took place hours or days before. Carol sneezes and blows her nose on a Kleenex. The next day, little Chet, with or without a sneeze, holds a Kleenex to his nose. The sight of the Kleenex comes to cue his imitative act.

- 9 Define imitative cue control and cite an instance.
- 10 Describe how imitative cue control develops.

WE ARE WHAT WE'VE EXPERIENCED

So much of what we do clearly results from cues associated with events from the recent past, often in the form of imitative cue control. We can see this in our own actions, the actions of our children and the actions of anyone else to whom we are close.

If we look at children, we can see how cues of the day before combine with our current cues somewhat like them to cause much of what the children do. For instance, children often imitate an act they saw produce a reward the day before, if they're now in a setting somewhat like that one. Little Harry Hammer sees Mom pounding a nail into the wall to hang a picture, and then standing back to admire her work with a satisfied smile. And the next day Mom catches him pounding a nail into the refrigerator door to hang one of his Bullwinkle coloring pages. Why? Because when we've seen others get rewards after acting in a certain way, we often imitate their acts — their acts serve as imitative cues for similar acts on our part. But after a while the imitative cue control even becomes so strong that children often imitate acts they see that may not have produced any clear-cut reward. For instance, little Chet's use of the Kleenex after he saw

Carol wipe her nose. Carol's act didn't produce a clear-cut reward, but Chet imitates it anyway.

Also, if a response produced a reward in one setting yesterday, any setting like that one may serve as a cue for that act today. Little Emily delights in throwing peanuts to the monkey at the zoo. So the next day, she throws her leftover peanuts at her startled fox terrier. When we ourselves get a reward after acting in a certain way in one place, we may act that way again in other places – places like the first one may serve as a cue. In a sense, in a new setting, we imitate our own acts that produced rewards in another setting. For instance, if we got a laugh after telling a joke to some friends, we're likely to repeat that same joke the next time we're around another group of people.

So the current cues may combine with cues produced by earlier events to cause imitative cue control. And current cues may also cause us to act in ways that produced rewards in the presence of similar cues from the past. Single cues and combined cues control our actions – single and combined cues that have acquired their cue control throughout our lives. This is true even though often we are not aware of the history of effects that produced the cue control.

But what about novel acts – acts that have never occurred before? There's no magic there either. New, or novel, acts may be almost like old acts, just slightly changed; or novel acts may be old acts combined in new ways, as a result of old cues combining in new ways – old cues that control the component acts. For instance, the sight of a dog cues the response, "doggy." And the sight of someone running cues the response, "run." So the first time little Chet sees the combined cues of a dog running, he says, "Doggy run" – a novel act resulting from old cues, **dog** and **run**, combining in a new way.

- ■11 Describe and illustrate two ways that past stimuli affect current actions.
- ■12 State how novel acts come about.

IMITATION AND SELF-GIVEN REWARDS AND AVERSIVES

As we've seen, acts can produce built-in results (opening a door pro-

duces an open door) and added results (opening a door for someone who is carrying packages produces a "thank you" from that person). Before, we said that added results were those provided by other people. But we'd like to refine this definition somewhat, because we can also add rewards and aversives to our own acts, making them more or less likely. This is something we learn to do, probably from imitating others. We come to follow our acts with rewards or aversives in the same places that others would be likely to do so.

For instance, listen to little Chet talking to himself as he cleans his room: "There now, I made the bed. Let me see (little Chet looks around the room), next I'd better put the toys away . . . Now, where does this game go — on the shelf right here . . . and these puzzle pieces go in the box (picks up pieces but drops them again) . . . Oh darn, I dropped them — stupid boy (picks up pieces and puts them in the box) . . . There, all done — that looks nice."

We can see how Chet's statements cue his acts of putting away the toys. But we can also see how the results of his combined acts cue a reward statement — he tells himself the room looks nice after he has finished picking up. And they cue an aversive statement when he calls himself stupid for dropping the puzzle pieces. Little Chet seems to be "judging" his own behavior in the same way another person might, like Mom or Dad, saying the same things to himself that another person might say to him. And he makes these kinds of statements because of his behavioral history — because others have done so in the past. Others have labeled Chet's room "picked up" under certain conditions: when the bed was made neatly and the toys put away. At that time Big Chet or Carol would say, "I see you're done — it looks nice." And later, little Chet imitates his parent's acts. When the same conditions reoccur, when the bed is made and the toys picked up, they cue Chet's act of telling himself that he's finished, that he has done a good job. And his own self-praise can increase the likelihood of all the acts of cleaning the room in much the same way his parent's social rewards could make that act more likely.

Since young children often talk out loud to themselves, like little Chet does, we have access to their verbal behavior, and we can more easily see what controls it. But older children and adults have private

verbal behavior that serves the same function, acting as rewards or aversives to either increase or decrease the likelihood of the acts they follow. You read through a term paper you've just finished, for instance, saying to yourself that it deserves at least a "B" and maybe an "A". This statement would be a social reward coming from someone else, and it's likely to function the same way when you say it to yourself. And self-given aversives work in the same way: "I shouldn't have told Sally that her new boyfriend is an idiot. All it did was hurt her feelings, making me the idiot." This statement may make it less likely that you'll say tactless things in the future.

Self-given rewards and aversives: rewards and aversives we provide for our own acts.

- ■13 Define self-given rewards and aversives, and cite an instance of each.
- ■14 How do we learn when to give ourselves rewards and aversives.

SELF-AWARENESS AND UNCONSCIOUSNESS

What do we mean when we say an act is unconscious? We mean that we aren't aware of it. We cannot tell others what we did. And how do we become aware of our own actions? How can we learn to describe our acts; in other words, how do our actions come to cue our verbal behavior? Our actions produce stimuli, or cues — visual, auditory, proprioceptive (muscle-controlled stimuli), etc. And these stimuli develop cue control over what we say in the same way that all other stimuli get cue control over other behaviors — by being present when acts produce their effects. In other words, our actions come to cue our verbal behavior that correctly describes those actions because correctly describing our acts and their causes often produces rewards or avoids aversives. Many psychologists now agree that we are able to describe our acts and their causes only to the extent that others in our world require us to do so, only to the extent that we can get rewards and avoid aversives by doing so. Our world controls how aware we are.

★   ★   ★

"What the hell do you mean by doing that?" Carol asked her husband.

"Doing what?" Chet asked, looking up from the photo album.

"Humming 'The Way We Were' while you were looking at those pictures of you and your old girlfriend."

Chet looked puzzled. "Gosh, Honey, I wasn't even aware I was doing it. Are you sure?"

"Oh, I'm sure, all right."

★   ★   ★

Chet's humming behavior didn't have cue control over his verbal behavior. Said another way, he couldn't say that he was humming or describe why he was humming. Yet people can often get rewards and avoid aversives if they can tell us what they're doing and why they're doing it. So often our nonverbal behavior will cue describing what we do or why we're doing it.

★   ★   ★

"You didn't learn, did you? There you are, humming that song again," Carol said, frowning at Chet.

"But Carol, I was just thinking of the first time we met — 'Drink and Drown' night at the bar, and that song was playing, remember? You looked so great winning the sorority beer-drinking contest — I just knew you were for me."

"Oh, Chet, forgive me for doubting you," Carol said, running her hand through his hair.

★   ★   ★

Now Chet is showing more self-awareness. He is aware of what he was doing (humming the forbidden tune), and he is also aware of the cause of that humming (thinking of his first meeting with Carol).

And why do we learn self-awareness? Why do our actions and their causes get cue control over our verbal behavior, allowing us to describe them? Because our actions and their causes have been paired

with reinforcement and avoidance procedures when we talk about what we are doing and why.

Self-awareness: features of our actions are serving as cues for describing what we're doing and/or why we're doing it.

■15 Define and give an instance of self-awareness.

IMITATION WITHOUT AWARENESS

As we saw before, many of our actions match the actions of others. Imitation. But this doesn't mean that we're trying to imitate people; that we're aware of the cue control. In other words, we often imitate others without being able to describe what we're doing or why we're doing it.

For instance, your political science teacher delivers a clever, articulate death blow to the argument of one of his students, who had suggested that there may be some people in the democratic party who aren't out and out communists. And your teacher sits there, his head cocked to the left, his mouth slightly ajar, his chin resting lightly on his left hand, legs crossed, elbow resting lightly on his left knee, left foot dangling in the air, eyebrows arched, his voice affecting a snooty, condescending accent. And he's not at all aware that his argument differs only slightly from the one William F. Buckley, Jr., made the night before on "Firing Line."

Dreaming may be another instance of imitation without awareness. As you may have noticed, your dreams are mainly weird imitations of the stimulus events of that day or the day before, but now you combine those old stimuli in strange ways. You are your own Salvador Dali, your own Fellini. And, of course, you didn't intend to dream the way you did — in fact, you may not even be aware of the dream. In other words, you could not predict your dream in advance, and you may have trouble describing it in detail after it has happened, and you may have even more trouble describing the stimuli that caused the dreams, perhaps because your act of dreaming is far from

an exact imitation of the stimulus events cuing that dream. So we are often unaware of the control such events have over our actions. You can also observe this process of imitation without awareness in the acts of young children as they begin to come under imitative control of many cues, perhaps even cues from the behavior of their pet dog or cat.

■16 Must we be aware that we are imitating, in order to imitate? Give an example to support your answer.

CONCLUSIONS

In this chapter, we began by discussing built-in and added rewards and aversives. Built-in rewards and aversives are those that follow our acts automatically, while added rewards and aversives have an arbitrary relation to our acts. Next we talked about imitative cue control — another kind of complex cue control, where the form of the act matches that of the cue. In other words, what the act looks like or sounds like matches what the cue looked like or sounded like. As children we acquire a good deal of our behavior through imitation, and we learn to give ourselves rewards and aversives by imitating others. Even as we grow older, much of what we do results from imitative cue control whether or not we're aware that it's happening. Bits and pieces of imitative cues from our recent past often combine with current cues, causing us to act in new, or novel, ways.

ENRICHMENT

Theories of Imitation

We looked at imitation as the control of the form of an act by a cue that has a similar form. And we said that the power of the imitative cue develops in the same way as that of all other cues — the imitative cue becomes paired with an act and its effects. With imitative cue

control, both stimulus and response generalization often occur. We imitate new acts because the cues arising from those new acts are somewhat like other ones paired with certain effects (stimulus generalization). We also imitate new acts simply because imitating has produced so many reinforcement and avoidance effects in the past (response generalization).

However, there are two other major theories of the origins of imitation. One theory states that we learn imitative acts because those acts themselves produce built-in rewards because of the acts' similarity to those of other people who are sources of rewards. The other theory states that imitation is a basic, inherited process – just as reinforcement and discrimination learning are basic processes we inherited. Let's breifly compare all three theories.

The Learned-Reward Theory. Why do children imitate their parents' actions? The learned-reward theory suggests one answer. It says this happens because the sights and sounds of the children's acts when they imitate are built-in, learned rewards. But why should those sights and sounds produce built-in, learned rewards? Because of generalization from the similar, rewarding sights and sounds of the parent's own acts. And why are the sights and sounds of the parent's acts rewarding? Because the parents' acts are constantly paired with the child's other rewards, like food, shelter, praise and so on.

At first glance, it seems likely that imitation does occur because the child's imitative acts have stimuli arising from them that are built-in rewards because of their similarity to the acts of rewarding people. But there's a problem with that theory. From the childrens' point of view, the stimuli arising from their acts when they behave like their parents are not like the stimuli arising from the parents' acts. Suppose Carol raises her hand. That produces a particular sight – Carol's raised hand. Now suppose little Chet raises his hand. For Chet, the visual stimuli that come from rising his hand above his head are much different from what he sees when Carol raises her hand above her head. In fact, if Chet doesn't specifically look up at his raised hand, he won't see it at all, since it's above his head. So, it doesn't seem too likely that Chet learns to imitate Carol because he matches the re-

warding sights and sounds her acts produce with his own imitative acts. To him, the sights and sounds of his own acts would differ from what he sees or hears when Carol behaves the same way.

On the other hand, if both little Chet and Carol were to stand in front of a mirror, then the visual stimuli resulting from Chet's raising his hand would be much more like those resulting from Carol raising her hand. However, even then, the sights still differ quite a bit, and a great deal of concept training might be needed so that the stimulus of a hand of a 5-foot, 6-inch, 120-pound woman will generalize to the hand of a 3-foot, 35-pound child.

So now Chet must match the muscle-produced and partial visual feedback resulting from his arm movements to the visual stimuli arising from those same movements when Carol does them. That is a difficult match to do — one requiring a great deal of training, though that training probably occurs without our being aware of it. The same sort of problem may also arise when we consider generalization of auditory stimuli, though perhaps to a lesser extent. The problem here is that sound striking the tympanic membrane in the child's ear is different when an adult speaks, than when the child speaks — so a fair amount of stimulus generalization is needed if the learned reward theory is correct.

The Biological-Maturation Theory. The other major theory of imitation is that it is a basic, inherited process — that we naturally imitate; that we've inherited that ability. According to this theory, if left alone, we will mature biologically and acquire the skills of imitation just like we acquire our wisdom teeth. Such a notion is appealing on an intuitive basis, because so often we are not aware of the reinforcement and concept formation processes taking place as our imitative behavior develops. And, at first glance, it would seem simpler just to say that we inherit an ability to imitate. But that first glance may deceive us.

Now many psychologists reject an earlier approach in psychology — one of inventing an hereditary mechanism to explain every aspect of human behavior. Now it is clearly simpler to understand the complex process of imitation in terms of the basic processes we al-

ready know (i.e., reinforcement processes, conceptual control, cue control, etc.). This is especially true, since:

1. We can form a believable account of how imitation normally occurs in the natural environment, without falling back on describing it in terms of heredity.
2. We can explicitly train imitative cue control, in both normal and handicapped children.

So we see no reason to invent an hereditary mechanism to account for imitation, since we already know that imitation can be acquired through normal learning procedures.

We cannot disprove maturation theories — theories that particular behavioral processes are inherited. The best we can ever do is show that such a behavioral process can be learned, and that we can account for the learning of such processes in the normal environment, in terms of the principles of behavior analysis.

The Learned-Stimulus Control Theory. In this text, we've proposed a learned-stimulus control theory, much like the learned-reward theory — both of which say we learn to imitate, that imitation is not due to heredity. But, contrary to the learned-reward theory, we stated that the crucial feature of imitation is that **the acts of the model serve as part of the cue for similar imitative acts by the child.**

The learned-reward theory does not deal with the **cues** for imitative acts. Instead, it states that the behavior of the model serves as the source of rewards, generalizing as built-in rewards produced by similar imitative responses of the child; in other words, imitating a parent produces built-in rewards because the parent is such a strong reward, and the child's act is rewarding simply because it looks like or sounds like the parent's act.

But we suggest that the major rewards for imitative acts are not the built-in rewards of looking like or sounding like the parent. Instead we think the major rewards for imitative acts are the built-in rewards that come from dealing with the world in a better way and the added rewards supplied by others. For instance, if in a restaurant, a child wants to order a coke just like Mommy's, the sweet taste of

the drink (built-in reward) and Mommy's smile for ordering what she ordered (added reward) increase the likelihood of the class of imitative acts. We don't think the major reward for ordering the coke is the fact that the child now looks just like Mommy, who is a strong source of rewards for the child.

And, as we've said, because imitative acts produce built-in and added rewards, the acts of other people come to cue our acts that look like or sound like theirs. This is especially true when we saw or heard their act produce a clear-cut reward or avoid a clear-cut aversive.

The Social Utility of a Learning View of Imitation. In general, the notion that behavior is learned, rather than inherited, provides a much more optimistic outlook for helping people who don't have certain behaviors. There's not too much we can do to help people if they don't have good language skills or good imitative skills if we say a basic biological or genetic flaw caused the lack of skills. But we can be much more optimistic and helpful if we say the person has simply failed to acquire a complex set of skills because proper rewards and cues weren't arranged in an effective manner. Then we can arrange proper cues and rewards to design a special world that will help the person learn those responses. So, in general, a learning view seems to lend itself much more to a helping approach for the person than does a biological-maturation view.

We are suggesting that the maturation theory of imitation doesn't encourage efforts to help people whose acts aren't under the proper control of imitative cues. Learning theories do encourage such helpful efforts. Psychologists who hold the biological-maturation theory often do research to find what sorts of models are more effective cues, as if we inherit a tendency to be more prone to imitate men or women, or as if we inherit a tendency to be more prone to imitate successful people. But psychologists who hold a learning theory of imitation often do research which helps retarded and autistic children learn how to imitate, so that imitative cue control can then aid in their learning of crucial skills for living — skills such as language, eating properly and self-care.

In fact, it is our notion that an inheritance, or maturation, view

of the development of complex behavior has caused a major past fail-
ure of society — a failure to try to change people's environments so
they could acquire skills that would help them achieve their full po-
tential. Previously, many people thought that those less fortunate
than themselves were simply biologically, and perhaps morally, de-
ficient — beyond help. Therefore, the successful were justified in ig-
noring those who were less successful. Fortunately, a learning view is
becoming more accepted, representing an example of the cultural
shift we've mentioned before. We think this may eventually lead to
more equal opportunities for more people, as we make attempts to
help them improve their learning environments so that they can ac-
quire more effective behavior.

■17 Describe the learned-reward theory of imitation. What fault do
the authors find with this theory?

■18 Describe the biological-maturation theory of imitation. Can we
disprove this theory?

■19 According to the learned-stimulus control theory, what is the
crucial feature of imitation?

■20 The learned-stimulus control theory states that the major re-
wards that make imitative acts more likely are _____ and
_____ rewards; that is the rewards come from dealing
with the _____ in a better way, or they come from other
_____ in the form of social rewards for imitative acts.

■21 Describe why the notion that behavior is learned, rather than in-
herited, provides a much more optimistic outlook for helping
those individuals who don't have those particular behaviors.

Built-in and Added Rewards

In other psychology texts, you may run across the notions of intrin-
sic and extrinsic rewards. In simple terms, intrinsic rewards are those
lying within the act itself. Extrinsic rewards come from outside the
act. As you might see, an intrinsic reward is much like the built-in re-
ward that we've talked about in this chapter, a built-in reward being
one that is automatically produced by an act. (Note: a built-in or in-

trinsic reward is often also called a "response-produced" reward.) An extrinsic is much like the added reward, which we've defined here as one that has an arbitrary relation to the act it follows.

We feel our terms are somewhat easier to handle, because they are simple words and still retain the intuitive appeal of "intrinsic" and "extrinsic" rewards. And once familiar with the concepts of built-in and added rewards, we doubt there will be any problem making the transition to "intrinsic" and "extrinsic," should you continue the study of psychology.

- ■22 What are intrinsic and extrinsic rewards?
- ■23 Which of those two terms is most like each of the following two terms: built-in and added rewards?

chapter 8
rule-controlled behavior

INTRODUCTION

Why do some of us stay on top of our lives, making few mistakes and learning from the ones we do make? Why do others of us go on making the same mistakes time after time? Why do some of us break away from traditional roles? Why do others of us stay locked in the narrower corridors of life, unable to take a useful, vital place in the world? Why do we feel guilty about things we've done, and what good or harm does this guilt produce?

In this chapter we'll begin looking at the answers to these questions when we examine many instances of rule-controlled behavior. But first we'll review what rules and rule-controlled behaviors are. We'll study the role delayed effects have on our actions and the no-

tions of guilt control and self-control. Finally we'll look at two kinds of problem rules: false rules and harmful rules.

REVIEW

Let's review some of the concepts introduced earlier in the book, before discussing complex examples of rule-controlled actions and feedback-controlled actions. In chapter 6 we talked about the notion of rules and the acts they control. A rule is a statement describing (a) an act, (b) the conditions under which the act normally occurs, and (c) the results of that act. **Rule control,** then, is the control of behavior by rule statements. **Don't speed on the highway or you might get a ticket.** This rule describes the act of speeding. The condition is the highway, and the result of the act under this condition is getting a ticket.

Sometimes a rule statement will imply, rather than state, the conditions under which the described act occurs; for instance, **be kind to others and they will be kind to you.** This rule doesn't state where or when to "be kind to others," though it's implied that we should be kind to others **under all conditions.**

Feedback statements are much like rule statements. Both are verbal cues that tend to make acts more or less likely to occur. They differ in that feedback statements are cued by our responses, or are "response-produced," while rule statements aren't. For instance, if I told you that you needed to start reading this book more carefully than you have been, that would be a feedback statement — because your sloppy reading cued it. But without ever looking at your reading in particular, I could give you a rule about reading carefully, like **read carefully or you'll get a poor grade in the course.** This is a rule since I didn't say it in response to cues that your reading produced. Feedback control is the stimulus control of acts by feedback. So if you're now reading very carefully, whereas you weren't a few minutes ago, then you're under feedback control.

Finally, let's review the notion of self-given rewards and aversives. Maybe you're now trying to keep reading this book even though you're getting hungry, your eyes are tired, and the stimulus control

of the task is generally starting to break down. In short, a study break would be a big reward. But the test is only a few hours away. So you shouldn't stop, yet you drift off task again . . . After a few minutes you come to with a start. "Goof-off!" you say to yourself, as you try to find the line you left off with.

When you call yourself a goof-off, your statement can be an aversive stimulus, and therefore it can decrease the likelihood of the act it followed, just as it would if someone else called you a goof-off. And we call your statement a **self-given aversive**, since you said it in response to your own acts. And, of course, you can give yourself rewards, too — for instance when you finish this chapter and congratulate yourself for reading the whole thing even though you were tired and wanted to quit.

- 1 **Review:** State the three parts of a rule and cite an instance of a rule.
- 2 **Review:** Give an instance of a rule where the conditions under which the act occurs aren't stated.
- 3 **Review:** Give a way that feedback statements differ from rule statements.
- 4 **Review:** Cite an instance of a self-given reward and a self-given aversive.

DELAYED BEHAVIORAL EFFECTS, RULE CONTROL AND FEEDBACK CONTROL

We stated earlier that rewards and aversives only affect the acts they closely follow; rewards and aversives won't affect acts that occurred some time in the past — even if those acts had produced, or caused, them. This is the **Principle of Immediacy.**

Principle of Immediacy: only those behavioral effects that closely follow acts can influence their likelihood.

So if little Benny Barber cut off the cat's whiskers and Mom spanked

him later when he was playing quietly, Mom would be decreasing the likelihood of playing quietly, rather than of cutting Kitty's whiskers.

Still, the rewards or aversives our acts produce are often delayed. We don't get a paycheck until we've worked for a full week or longer. We don't get a grade until long after we've turned in our term paper. In view of the Principle of Immediacy, why do we keep working and why do we keep studying? Let's see:

Distraught Wife: Damn it, Jack, we just got a bank statement that says you overdrew our checking account.
Humbled Husband: Oops.
Distraught Wife: And it says here we're being charged five dollars for each overdrawn check. And you overdrew three. So we're out 15 bucks.
Humbled Husband: Oops.
Distraught Wife: Well, I wish you'd be more careful. It's not like we have money to throw around. We're just students, you know.

Now suppose Jack does stop writing bad checks after this. How can we explain it? Jack was careless, didn't look over his checkbook figures, bounced some checks, and ended up paying a fine for doing so. But the question is: since it is a delayed aversive event, will Jack's fine suppress future mistakes when figuring his bank balance? No, it won't, according to our Principle of Immediacy. The aversive is simply too far removed from the act producing it, so that it can't suppress Jack's losing track of his bank balance.

Does this mean that the bank's letter isn't an aversive? No, the letter and the fine are aversives all right, but they don't decrease the likelihood of writing bad checks. Then what behaviors do they decrease? Well, again, according to the Principle of Immediacy, the fine will decrease the likelihood of acts that came right before it, acts like opening the envelope, for instance. In other words, an act made less likely by the aversive must have happened right before the aversive. And of course, writing the bad checks didn't happen just before the bank's letter arrived.

But if Jack doesn't write any more bad checks after receiving the bank's letter, what caused the change in his behavior? Well, it's likely

that the letter and his wife's statements were feedback, causing Jack to make a feedback statement to himself: "I'll try not to write any more bad checks; I'll keep track of my balance." The next time Jack is in the store, opening his checkbook will **cue** his statement about keeping track of his balance. And the statement then can **cue** his act of looking at his balance before signing a check.

So the bank's letter did exert some control over Jack's check-writing actions, but it was not a punishment effect for writing bad checks. Instead, the letter and his wife's criticism acted as feedback, causing Jack to make a rule statement about checking his figures. And, later, when he went to use his checkbook again, he repeated that feedback statement, which then cued his checking through his bankbook figures, thus preventing more mistakes.

- 5 State the Principle of Immediacy.
- 6 Give an instance of an act that decreases even though it didn't produce immediate effects that would cause it to do so.
- 7 Explain the factors that may have caused that act to decrease.

GUILT CONTROL AND SELF-CONTROL

Paul Mall, the human smokestack, the nicotine junky. Paul Mall, with the stench of thousands of old cigarettes, with yellow teeth and fingers, with clothes peppered by tiny burns. Paul Mall has decided to stop smoking. Why? Because it's too aversive to have to call himself a slave to his habit and a bad model for his children. Such self-given aversives are **guilt statements**. And to escape those aversives — those guilt statements — he must quit smoking — his behavior must come under **guilt control**.

Guilt statements: self-given aversives for acts that have produced or would produce other punishment effects.

Guilt control: the control of acts by guilt statements.

Guilt control often works with rule and feedback control, forming a powerful package of cues and effects. But cigarette smoking also becomes paired with many powerful cues. Smoking produces effects that are strong and immediate. In other words, they are built-in effects — they automatically follow the acts producing them — lighting up and inhaling. So, in order for Paul to succeed in quitting, the cues for not smoking, and the behavioral effects paired with those cues, will have to be stronger than the cues for lighting up. Let's now see how this might happen.

We can look at the acts involved with having a cigarette as links in a behavioral stimulus-response chain — beginning with taking out a cigarette, lighting it, inhaling and so on. Now, to stop smoking, Paul has to make the first acts of the smoking chain less likely because the first acts of the chain cue the following acts. So if the first acts don't occur, there are fewer cues for the other acts in the chain; there will be no first act to provide a cue for the second act, no second act to provide a cue for the third act, and so on.

Suppose Paul has just finished the last bite of a very rewarding meal. Now, all the cues are present for his act of lighting up that after-dinner cigarette, so he begins to reach into his pocket — the first act of the chain. But then Paul catches himself; in other words reaching into his pocket also cues him to tell himself he's foolish to smoke — a guilt statement Paul can escape from by not having the cigarette.

Or Paul might repeat a feedback statement as he goes for his after-dinner cigarette, perhaps telling himself he should try to resist since he has already made it through three long days without smoking. Such a statement could cue Paul's act of resisting the cigarette. Paul might also restate a rule that would suppress having a cigarette. For instance, he might say that people who smoke die younger and are often victims of lung cancer and heart disease. Even more likely, self-given rules, feedback and guilt statements might all combine to suppress his smoking behavior. Quitting may be a little easier if Paul can pick up some rewards for the self-control procedures he's using — rewards that will help maintain those procedures.

Self-control procedures: procedures we engage in that are likely to control our own acts.
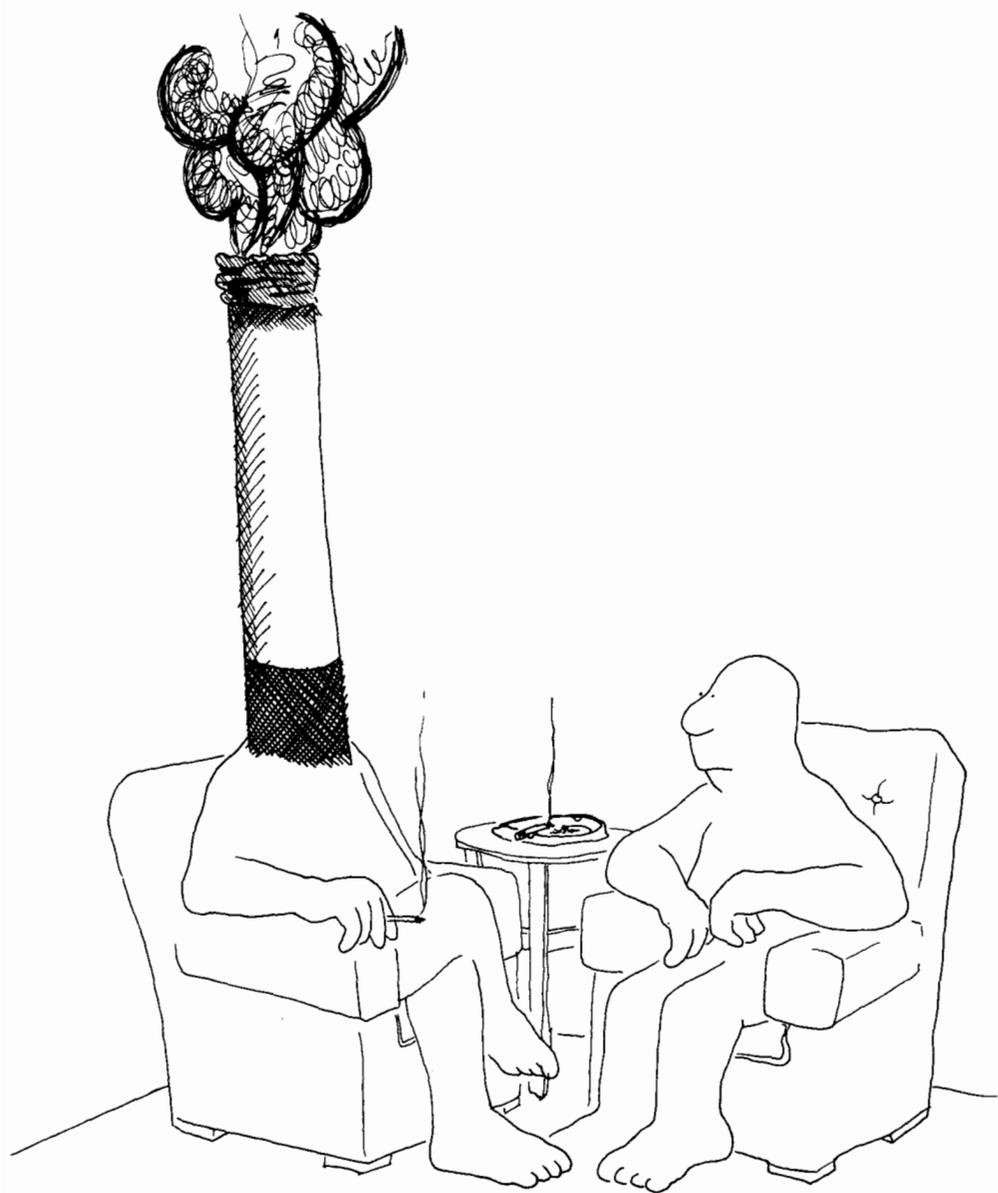
I plan to stop smoking next week.

For instance, Paul Mall's friends will tell him what great willpower he has, how they wish they could be as strong as he — sweet social rewards for quitting. And Paul may also get added aversives if he comes close to falling off that straight and narrow path, like that stony look from his young daughter as he reaches for a cigarette. That aversive itself may well cue self-given aversives and rules. If such a run-in with social disapproval causes Paul to throw his cigarette pack in the trash can, his daughter can now give her daddy a big hug for his self-controlled action — more approval.

All of these cues, rewards and aversives work together to make smoking less likely. They help break up the smoking behavior chains; as a result of not smoking the distant aversive events of lung cancer and heart disease become less and less likely, as the cues for having a cigarette lose control of that act.

To summarize: in order to engage in self-control procedures, our acts must come under the control of either feedback, rules, or guilt statements — more likely, two or all of these. And, at the same time, it is likely that we need added social rewards and aversives to keep our self-controlled acts going. So, when you hear your friends say, "I quit smoking so I wouldn't get lung cancer," you'll know the more correct reasons; you'll know that future events can't control what's happening right now; you'll know that current and past cues and effects controlled quitting.

- 8 Define guilt statements and give an instance.
- 9 Define guilt control and give an instance.
- 10 Define self-control and cite an instance.
- 11 Summarize the analysis of how we come to engage in self-control procedures.

FALSE RULES

Many of us have fairly strong behavioral histories for following rules. For the most part, many types of rules control many types of acts — and the only thing all of these rules have in common is that they cue acts that follow the rule.

But rules may begin to lose control over acts they once cued when behaving in accord with a rule doesn't produce the outcome described in the rule. For instance, TV ads may assure you you'll be beating off men/women with a club if you use Ole Sweat Socks cologne. But even after a gallon of potion, others are still defending themselves against you instead. So most likely you'll quit using the potion-lotion. And sometimes the whole stimulus class of rules may break down when a few rules don't produce the outcomes they describe. For instance, you may never buy new products after your experience with the false cologne.

Another instance: Rhonda Rebel finds that her parents are wrong about grass — no, it didn't turn her into an overnight heroin addict. In fact, it made her feel good. So maybe her parents are wrong about other things, too. Maybe she should try some of that Ripple wine her friends are raving about. Well, what do you know, Ripple tastes good, too, so that was a false rule about turning her into a skid-row bum. And what about sex in the back seat of the family car? Not bad. And she still hasn't been struck down by a lightning bolt and Terry still respects her, even though it has been two whole days since — more false rules.

Rhonda accuses her parents of not giving her the straight word — she accuses them of leading her on with false rules; just like when she was a kid and they told her that her teeth would turn black and fall out if she missed brushing after a meal; just like when they told her she would be swallowed by the earth if she ever missed Sunday School.

Why do people give false rules — rules whose described acts don't produce their described effects? Well, why do people give any rules? Because they want the rule to bring about, increase or decrease the occurrence of some act. However, the immediate effects for some acts aren't like the future effects for those same acts. The immediate effects of some acts make them more likely, though they may someday produce strong aversives — for instance, the student who parties in the evening instead of studying. The immediate effects of other acts make them less likely, though they may someday produce strong rewards — for instance, the person who stops an exercise program

instead of persisting. Now there is escape from those tired muscles, but how will the heart muscle repay the person in a few years? Under these two conditions, false rules become likely. The person giving the rule wants the described act to occur or to be suppressed, but the current effects for breaking the rule don't line up with the future effects for breaking that rule; either current rewards may later turn into aversives, or current aversives may later turn into rewards. Now let's look back at our examples.

Mom and Dad told Rhonda not to smoke marijuana because doing so would soon turn her into a heroin addict, causing her to die young, a needle dangling from her arm. But maybe her parents don't really think smoking grass will produce these results — yet, they may be afraid it will result in less dramatic, but real, aversives. For instance, it may have a harmful effect that's yet unknown. Or, in the here-and-now, it may result in Rhonda getting arrested. But neither of these outcomes is a sure thing, so telling Rhonda about them may not keep her from smoking. Hence the false rule, with its "sure" and dramatic aversives, geared toward gaining cue control over her actions.

And having a drink now and then won't instantly convert Rhonda into a worthless bum. So why the false rule? Well, drinking might well result in some aversives, like a car accident, or getting arrested for being a minor in possession of alcohol, or someday developing a physical addiction for alcohol, or outright, long-range, physical deterioration. But drinking also has some immediate rewards paired with it, like the built-in, unlearned depressant effect on Rhonda's nervous system, or the added rewards of approval from her drinking buddies. And these immediate effects will make drinking more likely, though that behavior may lead to the bad future events. If Rhonda's parents gave her a true rule describing these possible future results of drinking, it may not suppress her drinking behavior. So they give her a false rule describing sure, aversive results of drinking in hopes of preventing drinking.

The same thing is true of sex. There are possible aversives involved with it — the chance of unwanted pregnancy, for instance. But there are also learned and unlearned rewards for sexual contact. So there may be stronger cues and rewards for engaging in sexual actions, even

if Rhonda's parents tell her about the real aversives. Therefore, her parents give her a false rule stating strong immediate aversives for sex — being struck down by lightning, as well as losing the respect and affection of her loved ones.

False rules will begin to lose control of acts when they fail to produce their described effects. Mom said your teeth would turn black and fall out if you didn't brush them, but after missing a few times without having that happen, you might find yourself brushing less and less. So you can see what may happen when the rule is disproved: you may stop brushing your teeth even when there are true aversive outcomes for not brushing. But also the entire stimulus class of rules, both true and false, may lose some of its cue control over acts matching the rule.

And you don't have to directly disprove rules to have them lose their power to cue acts. They can lose control of your acts, even when you don't break them a number of times, without suffering the described outcomes. You can see that other persons who don't brush their teeth after every meal still have them in their mouths. So the rule begins to lose control of your acts because you've seen that it doesn't produce its described outcome when others break the rule. Acts under the control of false rules can also change as a result of someone else's verbal behavior. The girl down the block can simply tell you that whoever gave you the rule was putting you on (and what's more, she's embarrassed to hang around with anyone who is so easily conned).

So how can we resolve these problems, making true rules control the desired act? One way to do this is by giving additional true rules that we can provide effects for. We can say, "If you brush your teeth, I'll be happy and proud of you." Then we show that we're happy and proud when the desired act occurs. Or we might say, "If you don't brush your teeth, you won't get your allowance." Then we don't give the allowance if the teeth aren't brushed. Again, it's very important that we don't give false rules. Instead, we must give extra true rules that we can provide effects for. This is the best way we can get the desired acts to occur without having to worry about false rules, which can backfire and lose control of acts.

■12 Explain what we mean when we say rules can gain "conceptual control" over acts.

■13 State how true rules and false rules differ.

■14 Give an instance of a true rule.

■15 State the condition under which false rules are usually made.

■16 State two problems that may result from disproving false rules.

■17 False rules can be disproved directly (when breaking or following the rule doesn't have the described outcome). But other person's acts cue our acts of breaking the rule. State two ways this can happen.

■18 State the advantages of true rules (this is a two-part answer dealing with direct and indirect effects).

■19 Some true rules won't control acts since the described results don't serve as a strong cue, whereas they are strong cues for competing acts that "break" the rule. State one way to resolve this problem. Give an example.

HARMFUL RULES *(PORTNOY'S COMPLAINT)*

We've already said that rule control and guilt control can work together to bring actions under more powerful cue control. Breaking a rule can cue guilt statements that we stop by following the rule. But guilt and rule control can also cause problems, even though they can work together for our good. For example, not long ago many women were given a rule that suggested if you work outside the home, then you're a bad wife and mother. But now this rule is fast losing its power to control womens' behavior, as they find they can handle a career and/or a family, or anything else they choose. Yet, guilt statements often remain a sad remnant of a harmful rule like this. "I know I shouldn't feel bad because I'm not around when Johnny gets home from school. I know he's 18 years old and president of his senior class, but I still feel like he's being cheated by not having me there to give him some fresh-baked cookies when he comes home." Even though this woman broke a harmful rule, she still responds with guilt statements for doing so. In this case, the harmful rule doesn't

suppress working outside the home, but it still has bad side effects — guilt statements that make this woman's life more aversive than it should be.

In the previous section we discussed false rules, those that don't produce the effects they say they will. In the above example, we cited an instance of a **harm**ful rule given to many women about working outside the home. But what exactly are harmful rules and how do they differ from false rules? Harmful rules either suppress behaviors that **should** occur or they bring about or maintain acts that **shouldn't** occur. Harmful rules differ from false rules in one major way: harmful rules tend to increase undesirable behavior or decrease desirable behavior, while false rules tend to increase desirable behavior or decrease undesirable behavior, though they do so through deceptive means.

At its worst, a harmful rule might fully suppress the acts it describes so that they never occur in the first place. For instance, a talented woman who would like a career might never have one since a harmful rule suppresses her working outside the home. She's avoiding contact with the aversive described by the harmful rule (being a bad wife and mother) by never breaking it (avoidance cues controlling her acts).

Philip Roth wrote *Portnoy's Complaint,* a best-selling book about a man raised as a "nice Jewish boy." Portnoy's parents were determined that he turn out to be **someone**, since he was so bright and so talented. They laid out rule after rule, many of them false, many of them harmful, and they enforced these rules with constant nagging. Portnoy complains to his psychiatrist that his parents have filled his life with hysterical, superstitious rules — watch out for that, be careful of this, don't do that, and don't break this important law. But he could never figure out what the laws were or where they came from. What's more, his parents also controlled and suppressed many of his actions with religious rules and regulations as well as their own private rules.

As he grew to be a teenager he saw how many harmful rules his parents gave, yet he didn't rebel much — since his history for following rules — even bad ones — was very strong. Instead, he'd respond

with guilt statements for breaking any rule, even false rules, even harmful rules. Many of the rules Portnoy's parents gave him did have some good effects. His rule-controlled acts helped him be a good student and have a successful career. But his parents overdid it — in trying to make him perfect, they provided too many aversives for breaking useless rules. They may as well have said, "If it feels good, it's wrong. And if it feels bad, it's right."

Now as Portnoy talks to his psychiatrist it becomes clear that breaking any kind of rule still cues guilt statements. And at the same time, many rules designed to suppress acts no longer do so because those same acts have been paired with rewards. So he's trapped in a cycle where he breaks the rule and gets a reward, even though breaking the rule also cues guilt statements. So he can't fully enjoy many activities that produce rewards, since they also cause him to give himself aversives. He then becomes angry that he can't behave in ways others enjoy, because rules and aversives from his parents have successfully suppressed the acts. Except for his career, Portnoy doesn't lead the kind of life his parents want him to. And he avoids his parents as much as he can, since they're associated with so many aversives, so much nagging, so many tears. And this makes them unhappy. So they further nag him to visit them. And the nagging makes Portnoy feel guilty. And when he feels guilty enough, he visits them — their chance to give many more rules and aversives, to continue programming a heavy guilt trip. So Portnoy and his parents trap themselves into a sad and vicious cycle where everyone loses, all because of harmful rules enforced by aversives.

- ■20 What is a harmful rule? Give an example of one.
- ■21 What often happens when we break harmful rules?
- ■22 State why we break rules even though we feel guilty afterward.

THE NUMBER ONE RULE OF THUMB
FOR PREDICTING HUMAN BEHAVIOR

The best predictor of our future actions is our past actions. You can

often find out what someone will do in the future by looking at what she's done in the past. Don't listen to what she says about what she'll do in the future. Don't listen to what she says about how she's learned her lesson. Don't listen to her pledge to reform. Don't listen to her persuading, logical analysis based on new insights into her actions. Look at what she's done in the past.

Example: A grad student asked an instructor to reserve the first fifteen minutes of her lecture to her 300 student, intro psych class. He wanted to talk to them about taking part in a behavior mod project of his. She did, and he didn't. He didn't show up until 20 minutes past the hour, after she and the class of 300 students had wasted that 20 minutes waiting for him. The next term he made the same request, apologizing for his unforgivable tardiness of the last time, saying he had certainly learned his lesson, assuring her that he would be there on time for this class. Of course, you see the punch line coming. He may have learned his lesson, but it didn't change his actions. He didn't even show the second time around. She had learned her lesson, though. So she began her lecture without waiting for him when he wasn't there at the start of class.

Example: A writer we were working with had missed deadline after deadline on an earlier book; he had missed deadlines to the point where that book finally ground to a halt, and had lain dead for several years, though we all hoped he could use the Lazarus technique on it and raise it from the dead. And he felt very bad about it. His failure to finish the book had cost us thousands of dollars. Also, the book was to be a major contribution, having a new and important message.

He talked and talked about his strong desire to finish the book and finally talked us into redoing his contract. He had a great deal of convincing insight into his old shortcomings, so that now he would certainly get the job done. And it meant a lot to him that we had enough faith to give him another chance. And he certainly wouldn't let us down this time — after all he was a professional. Again, you see the punch line coming. He kept postponing and postponing his starting date as other things got in the way of his writing, though he "certainly was going to start next week because he was really com-

mitted to starting then," until, of course, he missed the final deadline, without having written a single word.

Example: Some people we know get into trouble because of excessive drinking. They say, "That was so awful; I'll never do it again. I'm just going to stop drinking, at least at parties, when I'm driving, and when I've got an important appointment that afternoon." And they really mean it. And they really believe it. But we can guess what happens.

Example: We all know students who get poor grades because they goof off. Most of them keep on goofing off in spite of their promises to do better the next term, in spite of the fact that they really know where it's at now. And of course their grades stay the same.

Example: Many loving couples have frequent fights starting with harsh words, going through tears, and then hours or days later ending in a loving reunion, with vows never to do anything so silly again. But we know, don't we?

And why do these things keep repeating themselves? Don't we learn from experience? Yes. But as we saw when we studied the Principle of Immediacy, delayed effects don't affect the acts they produced. If they affect our future behavior, it's because we've learned to say things to ourselves (feedback and rule statements) that will bridge the gap between the delayed effect and our act causing it. In the same way, delayed effects by themselves won't change the acts of the grad student, the psychologist, the alcoholic or the loving couple. And in some of these cases, their acts wouldn't change even if they did tell themselves that their acts caused the effects they did, even if they did give themselves feedback, since learning to change their behaviors involves a complex behavioral history. For instance, the grad student not only has to tell himself that he missed the appointment because he overslept, but he also has to have a strong history for making and following rules in order to change his behavior. He'll have to be able to make a rule based on his past actions: "In order to stop goofing up, I'll have to get to bed on time." And then he'll have to follow that rule.

Now let's go back to why such self-given rules control some people and not others. We've already said it's because of differing behav-

ioral histories. Some people just don't make such feedback statements to themselves. Why not? Because they're aversive. It's aversive to tell themselves they're in danger of looking bad, or that they're making a mistake, or that they're constantly messing up. And they can avoid contact with such aversives simply by not telling themselves the long-range results of their current acts. Another reason suggests that such statements aren't strong cues for some people even if they do make them. Why not? Because acts in the presence of such statements haven't been followed by immediate effects in the past. Think about the child whose parents often say, "If you do that one more time, I'll give you a spanking." Then the child does it again but doesn't get spanked. Such rules don't exert control over the child's actions since they don't produce their described aversives.

So rules will only be strong cues for some people — people for whom those rules have been effective cues for immediate effects, either reinforcement or punishment. Without a great deal of discrimination training of this sort, rules will not exert adequate cue control over our actions, regardless of whether those rules are stated by others or by ourselves.

Again, cues won't control acts if they haven't been paired with immediate effects. And this is why some people can't seem to change their acts even when they make contact with aversives, and why they can't change their acts even when someone gives them a rule that correctly predicts aversive outcomes. The problem is that the future aversive events are **too far away** from the breaking of the rule. So breaking the rule doesn't become a learned aversive event, and the rule statement will never gain good cue control over the action it describes.

So people having problems will most likely continue having them, in spite of one disaster after another. The only people who can profit from such delayed aversive events are already under good rule control. In other words, they can tell themselves that their act produced an aversive. Then, the next time the occasion arises to goof off they say their new rule to themselves, which prevents a replay of the unwanted behavior. Thus, they bring their behavior under the control

of a self-given rule, though it appears that the delayed effect has changed the likelihood of the act.

Learning how to generate new rules and how to follow those self-given rules is a way of acting that takes special training, special instructions from Mom, Dad, teachers, and other important, rule-giving people. Unless we have this training, our acts won't change if their effects are delayed. That is why we say that we will keep on acting the way we've acted in the past, thus our rule of thumb: the cues and effects that control our actions now will most likely be present in the future to control those same actions.

■23 What is the best predictor of future actions?
■24 What causes people to engage in actions even when they can predict that those actions will have aversive long-range results?
■25 What's keeping our behavior in line when we don't engage in acts that bring about long-range aversives?
■26 What are two reasons why self-given rules don't affect some people?
■27 State why self-given rules are effective for some people.

SOCIAL INFLUENCE (OR WE ARE WHO WE'RE WITH)

The people we spend time with are most often the major source of control over our actions. So if we want to know what we're going to be like, we should look at what our friends are like, or at least look at what actions our friends support. We are who we're with. And if we think otherwise, we're either very foolish or very, very outstanding.

Why are we who we're with? Because those people control most of our social rewards and aversives. And social rewards and aversives are the major causes of most of what we do. But not only that, our friends also control many other strong rewards in our lives: food, fun, sex, shelter, etc. So the people we spend most of our time with really do control many of our strongest rewards and aversives. And so, with those strong rewards and aversives, they also end up controlling many of our actions — they control what we do, even though they don't really mean to.

Therefore, we conclude that we are what our friends are, or at least what they program us to be (often the same thing). But here's one of the most common replies people make: "No, my friends can't program me, not if I really want to be something else." Perhaps not. But we shouldn't bet our futures on it. If we want to be good students, we shouldn't room with goof-offs. If we want to be straight, we shouldn't live with junkies. If we want to be capitalists, we shouldn't marry communists. If we want to be Christians, we shouldn't run with atheists. If we want to be behaviorists, we should make sure we spend a great deal of time with other behaviorists.

It's rarely enough just to "really want" to be something other than what our immediate world programs. Most Ph.D.'s really want to be hard-working scholars when they leave school. They've had a strong history of rewards for scholarly work. Most of their teachers were good scholars, serving as strong cues for imitation of similar scholarly acts. Besides Ph.D. students receive many rules stating how the only really worthwhile rewards in life come from honest, scholarly pursuits. They also receive negative rules about how strong aversives result from failure to become a good scholar — strong aversives like social rejection by old teachers, fellow grad students, and their profession. And they see a few cases of this rejection.

For instance: "What ever happened to good, old Hugh Hustle, the best grad student we ever had around here?" "He fizzled out. He's just teaching some place. Not doing anything really worthwhile," Yes, indeed, nearly all Ph.D.'s have been programmed to "really want" to be scholars. But we almost always end up doing something else, if we happen to get in a setting that rewards acts other than scholarship and research, if that system fails to set up avoidance procedures that support doing research. We'll do what our immediate situation programs, in spite of our "really wanting" to do research, in spite of how we say we're really going to get started on it next summer — really.

In fact, there is only one type of setting that maintains much research on the part of its members — settings that have fairly clear rules about the payoff for research — the publish-or-perish universities and research centers; your scholarship determines your promo-

tion, and even whether you keep your job. In other words, they set up these procedures: reinforcement procedures based on rewards for research; avoidance procedures based on losing rewards (the job) if we fail to do research, and informal punishment procedures based on mild aversive reactions and the loss of rewarding approval from our colleagues.

Sometimes old rules govern our actions so well that the self-given rewards and aversives that come from following the rules are stronger than the cues for acts that are likely to produce other rewards and and aversives from our current setting, but not often. So we should be cautious about assuming we have such a rare history — one that has managed to set up such tight rule-governed control. Instead, we must keep an eye on ourselves. And if we find rewards and aversives pushing and pulling our bad actions, then we may need to get into a new setting — one that will increase the sorts of acts that allow us to be the persons we want to be. To do otherwise is like trying to diet with a big, delicious, gooey, hot-fudge sundae sitting on your desk.

■28 Describe why we're likely to act like our friends act.

CONCLUSIONS

In this chapter we reviewed the notions of rules and rule-controlled behavior. We then discussed the Principle of Immediacy, which states that only the effects closely following acts can make them more or less likely. Thus, delayed events can't affect our acts directly. In order for them to change our acts, we must generate rules to cue appropriate behavior in the future. But this making and following of rules is a skill that requires a good deal of training, more than many of us have had.

Guilt statements — self-given aversives — often help us follow rules. This is because breaking rules sometimes causes us to give ourselves aversives that we escape from by following the rules. But rules and rule control don't always work for our benefit, though. Harmful rules can **cue undesirable acts** or **suppress desirable acts.** False rules,

those that predict a **false** outcome for an act, can be disproven and thus stop affecting the acts they are geared toward controlling.

ENRICHMENT

Worthwhile and Harmful Acts

In the text we defined harmful rules as those that cue acts that shouldn't occur or those that suppress acts that should occur. But what causes us to say that an act should or shouldn't occur? What makes an act worthwhile or harmful?

Are worthwhile acts those that produce rewards for people engaging in them? Not always. Many people behave in ways that produce rewards at the expense of others. Robbing a bank might produce rewards. An oil company can make money by greedily using up our natural resources. On a smaller scale, people may make clever put-down statements, producing rewards for themselves by suppressing the acts of others. So, clearly, worthwhile acts aren't merely those that produce rewards. Before we can begin to call them worthwhile, we must look at their effects on the rest of the physical and social world.

Suppose we said worthwhile acts are those that produce rewards without also producing immediate harmful effects for others or the environment. No, that doesn't seem to do it either. Look, for instance, at the acts of Ursulla Understanding, the misguided do-gooder, and David Depressed, a person she befriended. Poor David often talks about committing suicide, saying his life isn't worth living. And how does Ursulla respond? She gives him a great deal of attention and sympathy when he talks this way — attention that may well make these types of statements more likely.

And David says talking to Ursulla makes him feel better, so her acts aren't producing aversives for him. At least not yet. So are the acts worthwhile? They're rewarding for her, since she likes to "help" people, and they're rewarding for David's verbal behavior, since he likes being "understood." But what about in the future? Over time

Ursulla might increase David's depressed talk to the point where it cues his act of committing suicide. She may reward acts that lead David right into his grave. So before we can call our acts worthwhile, we have to look beyond their immediate effects, making sure that rewards we get or give now aren't making acts more likely that may someday produce aversives.

Parents who reward a child's lisp have something in common with Ursulla. They provide all sorts of attention and approval for such a "cute" way of talking, without looking at the effects of the child's lisp once he enters school — at which time teachers and peers may provide punishment effects for lisping. Ursulla and the lisping child's parents shouldn't provide rewards for depressed talk and lisping. Then such acts might not produce big future aversives.

Let's look at what we have now: worthwhile acts are those that produce effects that will make large future rewards more likely, both for the person who's engaging in the act and for others. Ursulla will be able to call herself a good friend if she can help David lead a happy, productive life. The parents of lisping children can call themselves good parents if they act in ways that will help the child's future happiness and effectiveness.

Let's take a few other issues. We shouldn't act in ways that might cue harmful acts in others if they would imitate us. Since each of us acts in ways that affect others and ourselves, since none of us can help affecting others, we should consider the effects of our acts, both on ourselves and on others, arranging our world so that harmful acts become less likely, and worthwhile acts become more likely.

■29 What are worthwhile acts?
■30 Cite an instance of an act that produces rewards but may some-
       day produce aversives.

Radical Behaviorism, Traditional Behaviorism and Methodological Behaviorism

Our book is based on a behavioristic approach to psychology. Historically, behaviorism has been a reaction against mentalism — a dom-

inant trend in psychology. According to the philosophy of mentalism, psychological events are mental events. That is, events that aren't merely physical. The mentalist says there's more to the psychological person than science will ever understand. They say mental events are activities of the mind, and that the mind is something more than just the biology of the person, something more than the brain, the nervous system, the blood, the chemistry, etc. "Mind" seems to be a vague concept — one derived from the prescientific, religious concept of "soul."

Now the main point of behaviorism is that all psychological events are behavior — all psychological events are physical — all psychologi- · cal events are bio-chemical. We can someday understand all there is to know about the psychological person; at least science is our best hope.

We can break main-line behaviorism into perhaps three points of view: (a) traditional behaviorism, (b) methodological behaviorism, and (c) radical behaviorism. Here is our interpretation of those three views.

Traditional behaviorism tends to deny the existence of private events such as dreaming or thinking, saying that all we can really deal with is people's verbal reports when they awake; and those verbal reports, those verbal behaviors, are our subject matter.

Methodological behaviorism admits that dreaming and thinking do occur; but such events can't be directly observed. by more than one observer, so we can't do reliability checks and, therefore, we scientists must ignore such private events. Based on the philosophy of logical positivism, methodological behaviorism says the subject matter of science must be capable of independent verification by the observer.

Radical behaviorism says private events do indeed occur and, furthermore, those private events are behaviors, behaviors governed by the laws of behavior, just as public behaviors are. Now we may have a hard time dealing with those private events, since we have so much trouble observing them. But we should try to deal with them, nonetheless, because such private events are both important and interesting. Furthermore, we will be more likely to succeed if we base

our approach on extrapolation or generalization from public events or public behaviors. So, we assume the laws of behavior also apply to private events. That's what we try to do when we talk about private behavior like thinking, self-given rewards and aversives, and cues, such as self-stated rules.

We may also point to another feature of radical behaviorism by calling it conceptual behaviorism. This ties in with a point made by others when they say the function of science is not only to predict and control, as we are so often told, but also to interpret. In other words, science also helps us understand events in our world, even when those events are beyond our prediction and control. And this is an intellectually rewarding accomplishment.

Now we've observed that most behavior analysts and most of those behavior modifiers, who are in fact behaviorists, tend to be some blend of traditional behaviorist and methodological behaviorist. However, since Skinner has introduced the term and philosophy of radical behaviorism, an increasing number of behaviorists are becoming radical behaviorists. For an example of thorough-going radical behaviorism, for an example of the most careful, consistent behavioristic analysis we've seen, we recommend Skinner's *Contingencies of Reinforcement,* not an easy book, but one of the main documents in our field. If you're new to radical behaviorism, you might approach Skinner's *Contingencies of Reinforcement* by first reading his *Science of Human Behavior* and then his *About Behaviorism.*

Now what we're trying to do in this book is simply to fill in some of the details, building on the foundations Skinner has already laid with his writing on radical behaviorism. But we don't anticipate that our examples of radical behavioristic analysis are the final word on these various topics. Far from it. They are attempts — but attempts that may help us move a few steps forward.

■31 What are psychological events according to the philosophy of mentalism?

■32 What are psychological events according to the philosophy of behaviorism?

■33 Describe how traditional, methodological and radical behaviorism differ.

Private Verbal Behavior as a Hypothetical Construct?

As we've pointed out, the radical behaviorist is willing to deal with private psychological events — events we cannot directly observe — events sometimes called hypothetical constructs (that is, constructs or events that we hypothesize exist or occur even though we cannot directly observe them). The radical behaviorist treats these private psychological events, these hypothetical constructs, as behavior, assuming that the same behavioral laws that govern observable behavior also govern private behavior. That is, cues, rewards and aversives control private behavior just as they do public behavior. But, as behavior, they are also physical events and, therefore, those behavioral physical events may in turn serve as cues, rewards and aversives for other acts.

In fact, anything other than this radical behavioristic position would seem to be consistent with what we know about actions and the laws that govern them. We can observe people talking out loud, and we know that they hear themselves talking. We know that they can respond to their own speech. Now there's no reason to suppose that people can't also talk to themselves, privately — that is, subvocally. And there is no reason to suppose that people cannot also respond to the stimuli arising from their subvocal speech, just like they respond to the auditory stimuli arising from their vocal speech, the sounds they make when they speak out loud. An infinite amount of subjective material supports these notions. Only the most ardent traditional behaviorists would deny that they personally talk to themselves subvocally and that they can respond to what they say to themselves.

Now as radical behaviorists, we can ask the following question: If private verbal behavior does exist, then what role should it play in our attempt to understand public behavior — overt behavior. Consider, for instance, the role of self-given social rewards and aversives. Suppose you're practicing the piano and you finally perform a difficult passage with consumate skill, with micro-second timing, with attack and release that would make the masters tremble with envy. Suppose you've just finished playing the world's greatest version of "Chopsticks," but, unfortunately, you were the only one privileged

to hear it. And suppose you say to yourself, "Fantastic, that was great." You just gave yourself what we would normally think of as a strong social reward. Now what effect does that self-given praise have on your "Chopsticks"-playing behavior? Are there other stimuli that might be rewards for your excellent playing? And will your praise add anything to these other rewards?

Yes, there are other stimuli that might be rewards; when you played the piece, it sounded and felt great. So those normal, built-in results this sound and feeling produced by playing "Chopsticks" are probably strong rewards that strengthen the behavior of playing the exercise so well. So is your self-given praise itself really an added reward, or is it just so much hot air that has no effect on your piano-playing behavior? Is your self-given praise simply a response to the auditory and kinetic stimuli arising from your exquisite piano playing — a response that will not function as a rewarding stimulus for future piano-playing behavior? Could it be that you are merely describing the strong reward value of the stimuli produced by your playing? Could it be that such a description is simply the coals of redundancy you're carrying to Newcastle? Perhaps no general answer exists. Perhaps your self-given social praise does function as a reward sometimes, whereas it may not add much of anything at other times.

However, we might consider one more factor in support of the notion that self-stated praise acts as a reward to control the behavior being praised. The factor is that those statements you make to yourself — like those self-stated rewards and self-stated rules — are behaviors too. They're verbal behavior. They're not just reactions elicited by the stimuli your behaviors produce. They're responses in the presence of preceding cues that occur because in prior times similar responses had produced rewards in the presence of similar cues. So we might ask what are the rewards maintaining the giving of those private reward statements. Well, hearing your praises sung, even when you're doing the singing, is probably a reward in itself, just as it is when someone else sings praises to you. So, simply the reward value of praise may be enough to maintain the behavior of giving self-praise.

But then we wouldn't be consistent if we didn't say that self-praise must also reward the act preceding the praise if it rewards the

act of praising in the first place. True, the further the reward is from the act, the less effect that reward will have on that act. But still it should tend to make the act somewhat more likely. So on the basis of this analysis we suggest that self-given praise probably rewards both the act of giving yourself that praise and the act preceding that praise, that is the act you're praising. And what is the status of self-stated cues, such as self-given rules? For instance, suppose you told yourself the following rule just before you sat down to play the most advanced version of "Chopsticks" known to the civilized world: "I know what I'll do. I'll tap my foot so I can keep a steady beat. And I must be sure to keep that old foot tapping." Then, you place Mom's big fat dictionary in front of your piano stool so that the tips of your little toes will produce resounding thumps. And then you say to yourself once more as you hop up on the piano stool, "I've got to keep them toes a tappin'." And you're off 1 − 2 − 3 − 4 − ta-ta-ta-ta-ta-ta-tum-tum-tum . . .

And what role did your self-stated, toe-tapping rule play? Did it serve as an effective cue for your toe-tapping responses? Or was it simply a response to the same preceding cues that controlled the toe-tapping itself? In other words, perhaps the piano, the music, etc., all combined to act as a cue for two separate responses. They cued the response of telling yourself to tap your toes. But they also cued the response of actually tapping your toes. Perhaps that cue would have controlled your toe tapping even if you had not supplemented it with your self-stated rule, "Tap your toes and you'll cook." It may be that sometimes self-stated rules in those situations provide supplemental cues that are effective in controlling subsequent acts. Whereas at other times, the statement and subsequent act may both be responses to the same preceding cues. But varying our story slightly, suppose that the maestro at the conservatory had said to you last week, "Now be sure to tap those little toes of yours, and you'll find you can nail that beat down." And also suppose you're heading into your music room to practice your piece for the Gong Show, and you ask yourself, "What was it the old maestro said? What should I do in order to win the Gong Show Talent Contest? I know he told me to do something. The problem was that I wasn't nailing that beat down steady enough.

So what was I supposed to do? Ah yes, he told me to tap my toes. And tap I shall." And tap you do. In fact, you eventually end up trading your piano in for a pair of Adidas 'Ginger-Rogers' tap shoes that change your whole career. You end up tap dancing your way into the hearts of Mr. and Ms. America and becoming the tap-dancing darling of two continents. But that's another story.

It may seem more plausible that your self-stated rule is functioning as a stronger cue than the rest of your immediate situation when that self-stated cue is the product of an elaborate, verbal, stimulus-response chain, like the monologue you carried on with yourself before you stated the toe-tapping rule. So, at least in some situations, it would seem plausible, if not probable, that self-stated rules do act as effective supplemental cues to control your own actions; they are more than mere correlated epiphenomena.

But we also have one more factor to consider in support of the notion that self-stated rules act as cues to control the behavior being specified in the rule statement. The act of stating a rule to yourself is behavior also. Therefore, some sort of reward must also maintain it. It's not just a reaction elicited by the preceding cues. In other words, if the current setting acts as the cue for you to make the response of stating a rule, then the reason you're doing so is because of your behavioral history, because stating rules to yourself has produced rewards in similar past settings. But what might the reward be for stating a rule to yourself? Well, unlike self-praise, it does not seem plausible that hearing rules stated is rewarding in its own right. So then we might ask, **under what circumstances would you bother to listen to rules being stated by other people?** And, the most common circumstance is probably when those rules will help you deal more effectively with your world by increasing rewards and decreasing aversives. And you might expect that the same is true of self-stated rules: you are most likely to state a rule to yourself in a setting where listening to your self-statement of a rule will help you act in a manner that will increase your rewards or decrease your aversives. So, we suspect that self-stated rules must often act as effective cues for your following behavior, or else those self-stated rules would not occur because

they would not help you increase your rewards and decrease your aversives.

■34 How would you support the notion that self-given rewards and aversives can make your acts more or less likely?

■35 How would you support the notion that self-given rules can serve as cues for your acts?

section 2
behavior modification

Now that you've studied the science of behavior analysis — the use of the basic principles of behavior to understand people, you're ready to study the practice of behavior modification — the use of those principles to help people. Since the basic principles of behavior allow us to understand why people act as they do, those same principles will also allow us to understand why behavior mod helps people change the way they act.

In all cases we'll deal with behavior, what people do; and so, in all cases we'll deal with behavior that occurs because of the rewards or aversives involved. People need help when their behavior gets caught in the middle of a tug or war between immediate rewards and aversives on one side and delayed rewards and aversives on the other side, with the immediate rewards and aversives winning, of course. The problem arises when those immediate rewards and aversives will cause people's behavior to go in wrong directions, directions that will reduce their overall rewards and increase their overall aversives.

The immediate aversives cause us to stop studying so that we fail to get the delayed reward of a good grade. Or, the immediate rewards cause us to overeat so that we do get the delayed aversive of too much body fat.

Behavior mod helps by joining in the tug of war, by adding strong immediate rewards or aversives on the side of the weak delayed rewards and aversives, or, by getting rid of some of the original immediate rewards and aversives that were pulling the behavior in the wrong direction.

Though only two decades old, behavior mod has already proved itself to be the best approach in helping people deal with the majority of their psychological problems, in helping people get the most rewards and the least aversives out of life. Behavior mod helps all people, young and old, retarded and normal, ourselves and others, in institutions and in everyday life. Just as behavior analysis helps us understand that our behavior is often caught in the middle of a tug of war, so behavior modification helps us win that tug of war.

chapter 9
issues to consider before starting behavior modification programs

INTRODUCTION

In the first part of this book we talked about some basic principles of behavior analysis. You learned about rewards, aversives and contingency-relationships that join them with actions. Learning those things will help you understand why people act as they do — why you act as you do. Much of what we do has been brought about by chance, by a blind world. Also, most of us could surely do more than we are doing now and do it better than we are doing it now. But to do so, we need a more consistent, less chancy set of contingency-relationships between our acts and their rewards and aversives. We could arrange the world to increase moments of joy and success, while decreasing moments of failure and sadness. All these things can happen, and in the future we may see them happen; we may be able to arrange for more and more people to become happy and productive.

But our first efforts often involve our helping people take care of some of their more severe problems. Many of these problems can only be solved by bringing about changes in behavior. In this chapter we'll begin to discuss behavior modification, the planned use of the

principles of behavior to influence actions. Using behavior modifica-
tion, we can start making desired behavior more likely and undesired
behavior less likely. But before we worry about changing actions, we
have to worry about what actions to change — a subject we'll deal
with in this chapter. We also need to assess what factors, or concur-
rent procedures, will help or hinder us when we set out to change
acts, another topic we'll discuss here.

WHAT BEHAVIOR MODIFICATION IS

We are always giving rewards, aversives and cues that affect what
other people do, think and feel; yet it's unlikely that we claim we're
practicing behavior modification. And that's because we don't analyze
how we are affecting others' acts or admit our part in affecting them.
Only when we look at a specific problem behavior, analyze it in be-
havioral terms, and arrange for conditions that will produce changes
in it do we call our activities "behavior modification."

Behavior modification: planned use of the principles of behavior to
influence actions.

All teachers, therapists and parents change, or modify, the behav-
ior of other people, if they're any good at their jobs. But few use
"behavior modification." We don't define behavior modification in
terms of what people do (changing behavior), but why they do it (the
cues and procedures that cause the modifiers themselves to do what
they do). Let's look at some instances.

Every time little Tulip Tugood smiles or goos or gurgles, her de-
lighted mother coos back to her in baby talk, tickling her tummy.
And, of course, all the neighbors comment on what a happy baby
little Tulip is. From what you learned in earlier chapters, you can
guess that Ms. Tugood is making her infant's pleasing social acts more
likely by using a reinforcement procedure. But she's not using behav-
ior modification. In fact, Ms. Tugood would deny she had any part in

Tulip's gay actions, preferring to think her daughter was born to be happy.

Now the student, Sally Psych, is serious about her science. Last year in Psych 101 she learned that an act will occur more often if it produces rewards. When her son, B. F., was about five months old, he would sometimes lie in his crib and grin at his cradle gym. Sally thought he looked so cute when he smiled that she wanted him to do it more often. So she began increasing B. F.'s smiling acts by using a reinforcement procedure. Every time B. F. smiled, Sally cooed and patted him — strong rewards. Soon little B. F. competed with Tulip as the happiest child on the block. And Ms. Tugood vowed she never saw two such "natural-born" optimists.

Two mothers changed the same acts of their children. By doing the same kinds of things, the parents made smiling occur more often. But only Sally was doing behavior modification, because only Sally was making planned use of the principles of behavior to influence smiling. In other words, Ms. Tugood's acts were brought about by the direct effects they produced. She tickled little Tulip (act) and Tulip smiled (reward of act). So Ms. Tugood's acts were under intuitive control. But Sally's acts were under rule control, even though her acts produced effects much like Ms. Tugood's. Little B. F. smiled, and his smile provided a cue for Sally's act of patting him, in accord with Sally's rule, "If you reward pleasing acts they'll occur more often."

"But," you ask, "both Tulip and B. F. were gay, lovable children; why should Ms. Tugood need to learn the principles of behavior analysis? Why should she use behavior mod? Would she be any better off?" Perhaps not. Ms. Tugood won't need to know about behavior analysis if she should have the good luck to do everything right in raising Tulip. But if something goes wrong — if Tulip begins throwing tantrums in a year or two, or has trouble learning to read, or fails to practice the piano — then Ms. Tugood will be better off knowing the principles of behavior so she can actively apply them when her intuitive actions fail to get the job done. Whether Ms. Tugood ever knows it, she will be a major factor in what Tulip does, says, thinks and feels. If she can analyze how behavior comes about, changes, continues or disappears she will surely have an advantage in rearing her daughter.

Why on earth would a woman like me need to know about behavior mod?

Knowing how her acts affect Tulip's behavior, Ms. Tugood can be a knowing participant rather than an ignorant one.

- 1 Define behavior modification.
- 2 Why would it be better if we knew and actively applied the principles of behavior even though we might not be having any current problems?

THE IMPORTANCE OF PICKING AN OBSERVABLE BEHAVIOR

Before you can change acts, you have to know what acts to change. The first rule of behavior modification is to specify an observable act that you plan to deal with — to increase or decrease. Both Ms. Tugood and Sally could produce a high rate of smiling because they could observe their children's smiles. But nobody can plan to make smiles more likely if they can't see them. So before you can apply the principles of behavior, you must be able to specify the acts you want to change. And you must be able to observe those acts. Why? Because you wouldn't know when to give rewards or aversives if you couldn't tell when the acts occurred.

As his first behavior modification project, Mr. Jones tries to teach his kindergarten children to "know the alphabet." But he makes the mistake of not clearly specifying acts he can observe. He makes the mistake of not specifying the acts involved in "know the alphabet." What acts will produce rewards? Saying "A, B, C," and so on, when he asks the children to recite the alphabet? Writing the letters "A" through "Z" on paper when he tells them to? All of these? Clearly, Mr. Jones can't provide rewards for "knowing" the alphabet, though he can easily provide rewards for saying or writing the alphabet. So he must specify behaviors he can see or hear — "knowing" isn't something anyone can see or hear; so "knowing" isn't something anyone can observe.

The major reason we must specify acts we can observe is so we can tell when they occur, so that we can apply behavior-change procedures to them. But there are other reasons why Mr. Jones must

specify behaviors he can observe. He may provide rewards for differ-
ent acts for different children if he doesn't clearly specify specific
acts that should produce rewards. His giving of rewards for different
acts may provide conflicting cues. So some of the children may
give up while others may spend a great deal of time checking with
Mr. Jones to see if they "know the alphabet." Children may bother
Mr. Jones all day, trying to collect their rewards, making it likely that
he too will give up, withdrawing his offer of a reward. And then the
children will have reason to doubt his word in the future. Mr. Jones
may say he'll never use behavior modification again, vowing it doesn't
work. He'll think children spend too much time worrying about re-
wards and too little time being concerned with "learning for its own
sake." But Mr. Jones would have avoided many hassles if he had
specified the acts he wanted to see, if he had valued his students'
learning enough to learn to use behavior modification well.

Specifying observable behavior also helps us deal with another
issue. Some people say behavior modification works with some prob-
lems, like getting babies to smile more often, but that it can't work
with more important things, like "self-esteem," "attitudes," "feel-
ings," "identity" and so forth. But these kinds of words are really
only summary terms for large groups of acts. For instance, what do
we mean when we say some persons have "low self-esteem"? We
mean they behave in certain ways that others don't; for instance,
they may talk about their past failures, rather than their past successes;
they may voice fears about taking on new projects, their favorite
phrase being, "I can't do anything right"; they may talk about others
being prettier, brighter and nicer than they are; they may blame
themselves for events they couldn't have possibly controlled, and so
on. These ways of acting cause us to say they have "low self-esteem,"
but we're using the term only as a label for patterns of actions.

We can help persons with low self-esteem by looking for the spe-
cific acts we observe — acts that give rise to that label. And, of
course, we also have to look at the cues and behavioral effects for
those acts. Once we've specified acts we can observe, we can begin to
change them, since now we know when to apply our behavior-change
procedures and what procedures to use, depending on whether we

want to make those specific acts more or less likely.

Suppose you and your Aunt Sadie want to do a b-mod project on her "bad attitude toward men." Have you specified a behavior you can observe? No. You can't observe an "attitude." But you can observe the acts that cause you to say she has a bad attitude. So you must shift your focus away from "attitudes" and to acts. What acts make up Aunt Sadie's "bad attitude"? And what may be some of the cues and behavioral effects that go along with those acts. You should sit down and make a list, being as specific as you can. Your list might look something like this:

Bad attitude:

1. Aunt Sadie criticizes my male friends.
2. She often says, "All males are animals who are only after one thing."
3. She often says, "Wars and starvation are due to men."
4. She asks that we don't bring any of our male friends along when we come to visit her.

Cues and behavioral effects:

1. We argue with her when she makes sexist statements — maybe our attention is making her sexist behavior more likely, rather than less likely.
2. We never bring our male friends to her house, again rewarding her demands — but maybe if we did their presence would be a cue to suppress her sexist acts, and she may even find their presence is rewarding.

You've discarded the summary term, "bad attitude," and specified some acts you can observe, as well as their possible causes. So now you can begin to modify Aunt Sadie's "bad attitude," by applying behavior-change procedures to the acts you've specified. For instance, you can stop arguing with Aunt Sadie's sexist views, instead ignoring them or changing the subject (extinction procedure). You may also stop rewarding her statements about not bringing your male friends around by bringing them over, perhaps making sure the first ones have many common interests with Aunt Sadie.

So we can use behavior modification to change all sorts of behaviors, both single acts, like "smiles," and groups of acts, like those that make up "attitudes." But we must specify acts we can observe before we can change any of those acts. Specifying observable behaviors is one of the most basic rules of behavior modification.

- 3 Why is it important to pick observable acts to change?
- 4 Can we modify things like attitudes and self-esteem? Why or why not? And if not, how can we tackle such problems?

RECOGNIZING OBSERVABLE ACTS

Here are some common problems; see if you can pick out those which specify a behavior you could observe and provide effects for:

1. Paul doesn't wash the pots and pans when he does the dishes. What's the problem behavior? Can you observe it when and if it occurs? Can you reward it? Yes, washing all pots and pans specifies a behavior that you can observe and reward.

2. Mary leaves her clothes all over the dorm floor. What must she do to keep the room looking better? "Do her share," you say? Say more — you must specify the **behavior!** "Put her clothes away?" Yes "putting away clothes" specifies a behavior that you can observe and reward.

3. Prudence swears at the other kids on the playground. If she doesn't pipe down, she soon won't have any friends — mainly because the other kids' mothers won't allow their children to play with her. Can we apply behavior modification to swearing? Swearing is a concept a little more abstract than washing pots and pans, though not nearly so abstract as Aunt Sadie's attitude. First, swearing is clearly behavior. In fact, it's a group of many acts that we call a response class, any swear word that Prudence comes up with fitting into that class. Your b-mod project will be easier if you specify the **exact** words you will observe and change. And because swearing is an ob-

servable group of actions, you can use the principles of be-
havior to reduce it.

We can sometimes define behaviors not only by the observable
acts involved but also by their observable results. In other words,
some acts leave a lasting mark on the world, while others don't. For
instance, your writing acts leave a lasting change in the world when
you write a letter. But your speaking acts don't generally leave a last-
ing change when you make a phone call, unless you're tape-recording
the call. We define acts in terms of their **form** when they don't leave
lasting changes we can easily observe (their form being what they
look or sound like). But we can define other acts in terms of those
changes they leave behind — or we can define them both in terms of
the changes they leave behind and their form. "Picking up clothes"
and "washing pots and pans" are acts we can define both in terms of
their form and their observable changes in the world. Picking up
clothes (an observable act) produces a cleaner room (lasting result of
act — of course, nothing lasts forever).

But swearing differs from picking up clothes and washing pots
and pans, because swearing doesn't leave lasting changes in the world.
The observable change in the world after Prudence swears may be a
rise in blood pressure of the local mothers. But pounding veins are
harder to observe than clean rooms or clean pots (for one reason, the
change doesn't last as long). So we would most likely want to define
the acts involved with swearing in terms of their form — in this case,
what they sound like — since defining them in terms of their observ-
able changes on the world would be very hard. We may want to spec-
ify the actual words we'll call swear words to help us easily recognize
them when they occur. Or we may specify a definition of swearing
that will help us recognize profanity — for instance, "those words
that name bodily excrement, sexual acts or take the name of the
Lord in vain."

The following examples will give you more chances to practice
recognizing observable actions. For each problem, state whether you
can observe the action — whether you can see or hear it, then try to
define it in terms of the way it has changed the world, or in terms of

its form. If the example does not specify observable behavior, specify some acts that might be involved — acts you can observe and follow by effects to make them more or less likely.

1. batting a pitched ball
2. learning arithmetic
3. biting fingernails
4. running
5. relaxing forehead muscles
6. making friends

Let's discuss those examples. "Batting a ball" is an act you can see. You define it partly in terms of its general form (the swinging of the bat) and partly in terms of the results of the swung bat on the ball (the ball moves in a new direction as a result of the act). So it would be fairly easy to count the number of times Tulip batted the ball.

But "learning arithmetic" is another matter. You've not specified any acts you can observe. You might begin by stating that the behavior you want to obtain is "adding behavior." Then, you must be more specific, perhaps saying the children must answer aloud the sum of any two single digits they see connected by a plus sign. You would probably want to specify quite a few more behaviors before we'd agree the children had "learned arithmetic."

"Biting fingernails" is much like the first example, in that you can define it both in terms of its form (acts we call biting) and in terms of the results of the acts (nails that don't extend beyond the point where they are attached to the skin). "Running" is an act (or group of acts) that you define in terms of its form. Running doesn't usually change the world in any unique way (unless you run across a clean floor with muddy shoes).

Like running, "relaxing forehead muscles" is an act defined only in terms of its form, the movement or lack of movement in the muscles themselves. But whatever your forehead muscles do, they don't make easily observable changes on the world. If you wanted to change the actions of those muscles, you'd have to define the acts in terms of movements. This could be hard to do and that's why biofeedback

machines are often helpful, where electrical energy from the muscles is transmitted through some wires to an amplifying circuit and onto a screen, much like a TV screen. In other words, small actions of the body become inputs to a machine. The machine then changes the inputs into lines on a screen that you can clearly see. The machine works like a magnifying glass in that it makes clear what is hard to see. It differs from a magnifying glass in that it only shows you the part of the forehead you're interested in − the action of its muscles. By using biofeedback, you connect the movement of forehead muscles to some part of the world, so that the muscles affect the world in an easily observable way − by producing lines on a screen.

The last example, "making friends," doesn't specify any acts we can make more or less likely. Even so, it is a very real problem for some people, and it will be easier to help them solve it if you specify acts you can observe. Look around you and pick out a person who appears to have many friends. Watch her when she meets new people. Unless she provides rewards of some kind, the new people aren't likely to hang around much. So we want to look at the popular persons and try to define what kinds of things they do and say that are likely to reward other people. They might smile when greeting others, look at them when they talk, respond to what the other is saying rather than changing the subject, and give many compliments. Other acts we often find rewarding are the making of useful statements. A person who has trouble making friends might begin increasing those acts.

Issues Concerning Observable Behavior

All acts are observable and affect the world by changing it in some way. A sight or a sound produces change in the world, just as much as hanging up clothes or washing pots and pans. But, of course, some behaviors are harder to observe than others, probably for three reasons:

1. Some acts are transient, or short-lived, making them difficult to observe. Profanity, a smirk or a frown might be hard to observe because it often lasts for only a second.

2. Some acts are hard to observe because of our limited ways of observing them. A twitch in the forehead muscles is observable, but often we can observe it only with the help of special instruments, like biofeedback machines. A heart flutter is observable, but we can't hear it without a stethoscope.

3. Some acts are hard to observe because they belong to complex learned response classes, such that the individual acts are difficult to specify. For instance, Aunt Sadie's "bad attitude" was hard for us to observe because it was hard for us to specify all the subtle behaviors that composed it. Often a problem related to this one is that acts that belong to such classes are also transient, or short-lived. Therefore, it's often very hard to modify an "attitude" because it's often made up of behaviors that are diverse, subtle, and short-lived, like Aunt Sadie's slight frown or raise of her eyebrows when a man enters the room.

- 5 Behaviors like swearing we define in terms of their _____, while behaviors like washing pots and pans we can define in terms of the way they clearly change the world.
- 6 What is the **form** of a spoken word? A written word?
- 7 Be able to recognize instances and non-instances of clearly specified actions, and be able to suggest how you might improve examples that don't involve the clear specification of behavior.
- 8 Be able to tell whether a behavior is specified in terms of its form or in terms of a way it changes the world.

CONCURRENT PROCEDURES

Many rewards and aversives are available for many acts in our everyday world, and all kinds of cues for these various acts are present. So if we are to change behavior, we must know what we're up against, what behaviors might compete with those we want to make more likely, what cues bring about actions we'd like to suppress. In short, when we want to add behavior modification procedures, we must

look at the behavioral procedures that are acting concurrently with the procedures we implement.

Concurrent procedures: behavioral procedures that are operating at the same time for the same individual.

Concurrent procedures may be composed of reinforcement, punishment and avoidance procedures. Furthermore, they may each have separate cues associated with them. Or they may not. And they may all be operating on, or affecting, a single response, or they may be affecting different responses. For instance, a reinforcement procedure might involve one response, while both an avoidance and punishment procedure might involve a second response. We should say that all three behavioral procedures are operating concurrently on a person's behavior — they are all concurrent behavioral procedures.

We must consider concurrent procedures because they will affect the response we're interested in bringing about or changing. Take the case of Susie, who had an active sweet tooth. Every day she bummed sugarless gum from her mother, a generous woman. As the weeks sped by, her mother wondered if she might use a daily ration of gum as a reward for Susie's putting the dinner dishes in the dishwasher. She explained to Susie that from now on she could earn two pieces of gum on any day she did the dinner dishes. On the first day, Susie was quick to do the dishes and collect her gum. Then several days went by where Susie kept on asking for gum as she had in the past. Each day her mother reminded her of the way she could get her gum. Finally, Susie's asking behavior stopped, since it no longer produced a reward. Her mom patiently waited for Susie to race to the dishwasher after dinner. No race.

So Mom began to watch her daughter, noting that she was still chewing gum quite often. On following up this clue, she discovered Susie's dad was giving their child gum — and it wasn't even sugarless! Susie's mother was no longer a cue for asking. Now her father was. The fact was this: Susie could get the gum in two ways — by washing the dishes and by asking her father. Which do you guess would be more likely to occur? After much lengthy debate, Mr. S. agreed to

stop bootlegging gum to Susie and to join Ms. S. in giving gum only when Susie loaded the dishwasher. Soon Susie did the dishes every night.

This is a very simple example of a concurrent procedure. In one case, the presence of Susie's father was a cue for an asking response that produced gum. At the same time the dinner dishes were a cue for putting them in the dishwasher, an act that also produced gum. In the case of these concurrent procedures, the reward was the same. But one of the acts was much easier than the other. So Susie produced the reward with the least effort. Smart kid.

Now let's look at another example of concurrent procedures. Carol Competent, a sophomore at B.S.U. (Big State University), sits down at her desk to figure out what she should do with the Thursday evening ahead of her. Her roommate is going out for an evening at the bar and has asked Carol to join her. That request is a cue, a cue for a reinforcement procedure. But in looking at her calendar, Carol sees she has a big paper due in her English class on Monday, and she tells herself it certainly wouldn't hurt her to get started on it. So now, along with her roommate's invitation (reinforcement cue), there are avoidance cues for writing — working on upcoming papers in the past has helped Carol avoid bad grades. And because Carol enjoys her English class and finds the topic of her paper interesting, there are also reinforcement cues for working on that paper. Looking again at her calendar, Carol sees she will have a calculus test on Tuesday. She tells herself she should begin studying for that one also — more avoidance cues.

Carol Competent has concurrent procedures available for several acts — going to the bar, writing a paper, and studying calculus, to name a few. Which behavior will she engage in? The act associated with the **strongest** cues. In Carol's case, the strongest cues tonight are for working on her English paper, so that's what she'll do. And how do some sets of cues become stronger than others? It depends on our behavioral histories — on the kinds of effects certain acts have produced, on the closeness of those effects to the acts, and the magnitude of those effects. It also depends on the number of concurrent cues present for a given behavior. For instance, Carol has marked her

calendar to cue her study behavior. She also cues study behavior by saying things to herself, things like — "only five days until the paper is due, and I'd really like to do a good job on it." If her paper weren't due for a month, she probably wouldn't say such things to herself and might study her calculus or join her roommate for an evening of fun; in other words, another set of cues would control a different act.

But what if cues for getting her work done weren't the strongest ones? What if Carol spent her evenings doing everything but studying? If this were true, we behavior modifiers might try to change the value of those cues, just like Susie's mother did when she got Susie's father to stop giving Susie gum. We can change the value of the cues by making sure studying produces stronger or more immediate avoidance effects. Or we might arrange for Carol's non-studying acts to produce punishment effects, like a fine, for instance. But, of course, before we can begin to modify Carol's actions, or Susie's actions, or anyone's actions, we need to know what we're up against, what concurrent procedures are operating.

- 9 What is a concurrent procedure?
- 10 Give two everyday instances of concurrent procedures.

CONCLUSIONS

People are always influencing the actions of others, but we say they're practicing behavior modification when they plan and use the principles of behavior to influence actions. Often we're better off actively changing behaviors than letting chance cues and effects do it — we're more likely to get what we want. But, of course, we have to state specific, observable acts we want to change before we attempt to change actions — because if we don't know or can't observe what acts we want to change we won't know when or where to provide cues and behavioral effects. We also need to know what concurrent procedures are available for acts we want to bring about, maintain or suppress. In this chapter we've looked at issues we must consider before we set up b-mod projects. In the next chapter we'll look at things we need to build into our b-mod procedures.

chapter 10
general issues in modifying behavior

INTRODUCTION

We've discussed some points you should think about before starting any new b-mod program — points that should help you set up a program that works. But how can you be sure your program will produce the changes you desire? Will it keep on working? And what if you're dealing with people who only want to talk about their problems, rather than do something to change them? We'll begin to look at the answers to some of these questions in this chapter, answers that will help you see how to go about changing behavior and what aspects of behavior modification set it apart from our everyday influence on the behavior of others.

INFORMED CONSENT

Suppose you're a behavior modifier and that people come to you to help them solve their problems. Are you ready to begin once you've specified the observable behaviors and the procedures you want to use? No, not yet. You should first obtain peoples' informed consent before you attempt to modify their behaviors.

What is informed consent? It's an agreement between you and the person you're working with, much like a contract. It's where you and that person decide, in writing, what you'll be working toward and how you'll be doing it. On the consent form you state the goal of the program that you and the person have agreed upon, you describe the procedures you will use, and finally, you clearly state any aversive procedures and/or known dangers.

Informed consent protects both the people you're working with and you, the behavior modifier. People must know exactly what they're agreeing to — you don't have the right to change them from bottom up. Informed consent keeps us honest with ourselves and the clients we're working with. At the same time, it keeps people honest with what they want for themselves. Informed consent also insures that you make goals and methods clear, so that everyone is working toward the same end. It's an up-front agreement that you will supply services that will result in changes in peoples' observable actions, and probably what they say to themselves, too.

- 1 What is informed consent?
- 2 What are three items included on the consent form?

CHARTS AND GRAPHS

Behavior modifiers insist on analyzing problems so that they can deal with events they can observe. We do this so that we can detect changes when they occur. It's easy for us and someone we're working with to kid ourselves and agree that the person is improving, since that's what we both want. But our agreement should be backed up by something more clear-cut — something that more clearly shows improvement or lack of improvement.

The best way to tell if behavior is changing is to record the events that show that changes are taking place. We gather data on behavior since that's what we want to change. Usually, we want more of the behavior or less of it, or more of it in some situations and less in others. So we need to find out how often and under what conditions

the acts occur once we have specified the responses we want to change. Therefore, we count how often the response we're interested in occurs. Then we make a graph so we can look at the data and get an overall view of what's happening before we set out to make big changes.

Remember Prudence, who shocked the local mothers with her swearing? Let's say you want to do a behavior mod project to get Prudence to stop swearing on the playground. First you go out to the playground and count the number of times she swears (per hour, per day or per week). Then you make a graph to show what you observed (see Figure 10.1).

Figure 10.1. Prudence's swearing during baseline period.

These data are called **baseline data**. They show what was happening when you first looked at the problem, before you did anything to bring about changes.

Baseline data: a measure of the behavior you're interested in changing before you begin a behavior modification procedure.

You should make such a graph so you'll have a visual picture of how much Prudence swears.

To read the graph, look at the horizontal line (Days), then go up the vertical line (Number of Swear Words Per Day) to see how many times Prudence swore on a given day. For instance, on day one, she swore 15 times; on day two she swore 10 times; on day three she swore 19 times, and so on. You keep watching Prudence on the playground when you're trying to modify her swearing, counting each instance of her swearing. Then you can compare her swearing now to what it was during baseline (see Figure 10.2).

Figure 10.2. Prudence's swearing during and after baseline period.

This graphing allows you to look at the past and present, side by side, without having to remember "what it was like before." For instance, you may forget how bad her swearing was before you dealt with the problem and may feel you haven't made much progress,

even though you have made a great deal of progress. So you need a record of baseline events you can compare with the events that occur after you begin your b-mod procedure.

- 3 What is the best way to tell if a behavior is changing?
- 4 When do you take baseline data? What do they show?

KINDS OF MEASUREMENT

You'll need to decide first what acts to look at, or measure, and how to look at them to get data to guide your behavior modification projects. Often, data on the frequency of the act you're interested in (that is, the number of times it occurs) are the best measurement. At other times we need other measurement techniques. Sometimes, for example, we must measure the likelihood of a behavior we're interested in indirectly if we hope to modify it.

For instance, suppose you're a behavior modifier and a person comes to you depressed and talking about committing suicide. Naturally, a very serious problem like a possible suicide attempt calls for immediate action, perhaps even hospitalization. You must still gather as many facts as you can and then make the very crucial decision of what to measure. Clearly, you wouldn't want to measure "suicide attempts" because there must not be any attempts. Instead, you should look for behaviors that are likely to be associated with, or be cues for, suicide attempts. Guesses as to what these behaviors must be must be based on the particular case (and of course only a trained person should make those decisions). But some things you might measure are the verbal and written statements expressing a desire to commit suicide or the time the person spends alone doing nothing. Or, you could record acts like buying a gun or obtaining a prescription to sleeping pills.

You might also measure behaviors the person engages in that might compete with suicide attempts. For example, you might collect data on whether the person belongs to any clubs, has a job he is interested in, has hobbies, has friends and so on. Then you might try to

work on increasing the time he spends in such rewarding activities, rather than time he spends alone, thinking depressed thoughts. These, of course, are only a few ways you might use to deal with a complex problem.

Like suicide attempts, stealing is a behavior you often can't measure directly so if this is the behavior you want to change, you may well have to deal with behaviors likely to be associated with or be cues for stealing. For instance, you might measure the time the person spends walking through the local stores, or the time she spends with friends who also steal, or who wouldn't provide punishment effects for that behavior. Or, you might want to measure the amount of time the person spends doing things that compete with stealing, like schoolwork, watching television, joining athletic or church groups, and so on. The more time she spends in such activities, the less likely she will be to rip off the local merchants.

Once you've decided what you're going to measure and how you're going to measure it, you face a new problem: How do you know your data are correct? What would the data look like if someone else recorded them? Are the data you plot accurate accounts of the events you want to change? Are the events you're recording really tied to the behaviors you should be interested in — like suicide attempts and stealing?

- 5 What's often the **best** measurement to get on behavior you're interested in?
- 6 Why don't you always measure the frequency of an act you're interested in changing?
- 7 What are two things you might measure if you can't measure the frequency of an act? Cite two such acts and describe how you might measure them.

RELIABILITY AND VALIDITY

As you can see, collecting data brings up some new problems having to do with whether the data you've collected have value for you. We

deal with these problems under the headings of reliability and valid-
ity. Reliability and validity of data are important concerns in psy-
chology.

Reliability: the extent to which two measures of the same event
yield the same data.

Measuring behavior is perhaps a bit harder than some other kinds
of measurement. An act is here one moment and gone the next; it
has a very short existence. You may count the number of "A's" on a
printed page several times to see if your count is reliable. But you
can't go back and count the number of times Prudence swore today,
unless you have a tape recording. Prudence swears, and you either
count it or you don't. And you miscount if you happen to be look-
ing and listening elsewhere.

But there's another way to find out how reliable your count of
"A's" is. You can ask someone else to count them too, and compare
your measures. The same goes with short-lived responses. Two peo-
ple can observe the behavior and record the responses. We call this
interobserver reliability.

Interobserver reliability: the extent to which the same data taken by
two people agree.

Whether counting "A's" on the page or Prudence's swearing acts,
you get interobserver reliability if you and the other observer count
the same number of items. Recalling Prudence on the playground,
you need to find out if someone else's record of swearing looks the
same as yours. Instead of going out every day to the park to record
her data, you could ask her mother to record the data on Prudence's
swearing. Then you could do a **reliability check.** You could go out
two or three times during each phase of the program (baseline, proce-
dures, follow-up) and count for yourself. You and her mother should
get a similar count on the data that you both count; to the extent
that you do so, the reliability of the data is good. One thing to re-
member, though, is that your counting should not affect mother's, or

vice versa. In other words, you and the other observer should make your counts alone, before comparing them. Prudence's acts should be the only events that cue your counting, and what somebody else is counting should not affect how you count.

Of course, if your records differ greatly you have no way of knowing what an accurate count would have been. And you shouldn't assume mother is a poor data taker, since all you know is that someone's data aren't reliable: So now you must figure out how to better define the behavior and how to better observe it so that you can make a reliable count. You must have reliable data before you can say your behavior modification procedure worked. Changes you see after your program treatment could be due only to your poor measurement if your data aren't reliable.

You may still wonder how valid your data are after you've seen how reliable they are.

Validity: the extent that our data are related to the behavior we are concerned with.

Often you don't have to worry about how valid your data are because what you observe clearly relates to the target response: it is the target. Consider Prudence's swearing. You want to decrease the frequency of those acts, so you measure how often they occur. Then you watch to see if they occur less often after you change the relations between swearing and the events that follow it. The validity of the data is clear.

But the validity of your data is less clear if you're not directly measuring the frequency of the behavior you want to change as with problems like suicide attempts or stealing. Before you begin our treatment program, you can only guess that the behaviors you've picked to work with will change the behaviors you really care about. You hope the events you've chosen are related to suicide attempts and stealing; in other words, you hope they are valid to the extent that they are truly tied with or competing with the behaviors of attempting suicide and stealing.

- 8 Define reliability. Describe an instance of it.
- 9 What is interobserver reliability?
- 10 Define validity. Describe a behavior that you **can** be sure you're getting a valid measure on and another behavior you **can't** be sure you're getting a valid measure on.

EXTENDING BEHAVIOR CHANGE

The last point we'll discuss in this chapter concerns how far the changes you obtain extend into the life of the person whose behavior has changed. The point is this: in the real world, you don't simply want Prudence to refrain from swearing on the playground where you did your b-mod program. You did it there because that was where she swore most often and where it caused the most trouble. But your broader goal was to arrange things so Prudence's good acts will produce more rewards, fewer aversives and keep her mother from getting an ulcer. You must make sure her mother knows how to maintain the decrease in Prudence's swearing. You must also make sure that Prudence doesn't simply shift her place of swearing to the nursery school, the living room, the back seat of the car or her grandparents home!

But the behavior change won't "just happen." To extend the behavior change into these other settings, you must plan for it. Changes in any behavior are only as lasting as the behavioral procedures that maintain them. If you want to stop Prudence's swearing, you may arrange for other rewards to take over. The best way for other rewards to take over is to arrange for other behaviors to occur. Perhaps if you reward Prudence for saying, "Oh, darn" when someone beats her to the slide, you might not need to worry much about what she might have said instead. Also, you may want to instruct others in her world to always ignore her when she swears.

Only in the past 15 or 20 years have people begun to accept the concept of changing human acts by applying behavioral principles. At first we had to spend much time showing that human acts would change if their behavioral procedures changed. The next step proved

even harder: How could we be sure the new ways of behaving would last? It must be clear by now that no way of acting will last forever. People only keep on acting as they do because the world keeps on giving the cues and effects that maintain their acts. So Mom must always be careful to keep providing rewards for Prudence's using terms that aren't swear words.

Perhaps after a while Prudence will "just naturally" use other terms, since they've produced many rewards. But Mom shouldn't count on it, shouldn't stop listening, shouldn't stop providing rewards for better ways of talking.

■11 What do we mean by "extending behavior change"? Give an instance where the changed behavior is generalized.

CONCLUSIONS

In this chapter we discussed two things we must do before we begin a b-mod program to change behavior. We work out a consent form with our client, stating what acts we're to work with and the procedures we're to use, especially any aversive procedures. Then we gather baseline data on the behavior to be changed, recording these data on a graph.

We also discussed the kinds of measurement we might use, the best being an actual recording of the frequency of the behavior of interest. Sometimes, though, we can't get a direct measure of the act we're interested in, in which case we look for acts closely related to, or cues for, that act — or acts that might compete with it. But whatever we measure, we try to make sure our recordings are reliable and valid. And we also plan to extend any desired behavior change we get — because all too often such extension doesn't "just happen," so we end up back where we started.

Behavior modification is made up of powerful sets of procedures that can help people in ways no other techniques have been able to. But we must follow the rules in this chapter — getting informed consent, gathering baseline data, using charts and graphs, making sure our data are reliable and valid, and planning for generalization.

chapter 11

some basic techniques of modifying behavior: sexist behavior

INTRODUCTION

Have you ever known people who kept messing up their lives or other people's lives or your own life? Have you ever wished you could help them change? Did you feel you didn't know what to do? Well, in this chapter you'll learn something about what to do — you'll learn about some techniques for helping such people change their behavior. You'll learn that you don't have to sit on the sidelines with your hands in your pockets as people make a mess of their lives and the lives of others. You can **deal** with it. You can help them turn their lives around. And you can use the same techniques to improve your own life.

In the last two chapters you saw that behavior modification was the planned use of the principles of behavior to change behavior. You also saw some of the basic features of a behavior-modification project:

getting informed consent, observing and recording the behavior, making sure that your observations are reliable and valid, and that the modified behavior generalizes from the initial setting to other settings of concern.

In these next few chapters, we'll look at some specific ways to change behavior using behavior modification. And in the present chapter we'll look at some very basic techniques we often combine with other techniques when changing behavior.

In fact, the first technique we'll cover is so basic you may be surprised we even call it a real behavior modification technique — yet it is also so basic that many behavior modifiers often overlook it; it is the technique of simply asking people to modify their own behavior — to change the way they act. We will also look at some basic techniques that may be less obvious — the techniques of self-recording, feedback, social rewards and behavior contracts. And we'll look at all of this in a case where a woman helped a male colleague get rid of some of his sexist behavior.

SEXISM: SPECIFYING THE PROBLEM BEHAVIORS

Marie: Jim, may I talk to you for a minute? Something's been bugging me a bit, and I thought it would help if I got it out in the open. Now I don't want to sound too aversive, but I'm a little concerned with the effect you're having on Sally. And I don't think you're the only one doing it — we may all be. But it looks to me like you may tend to treat Sally a little more like a servant than like the equal she really is.

Jim: What do you mean?

Marie: Well, you're always telling her what to do and asking her to get things for you — like you're her boss. But you're not. She's worked here as long as you, and she knows what needs to be done and how to do it just as well as you do.

Jim: But she doesn't mind.

Marie: I know. It's easy for all of us to fall into that old male-female role. But that doesn't make it right. She needs to have the chance

to pick up new skills, just like you and I. But if she stays in that old servant role, she'll never get anywhere. I think you can really help her if you stop giving cues for those sorts of acts, if instead you dish out some rewards when she's acting a little more on her own.

Jim: But still, she doesn't mind. So why should it bother you?

Marie: It bothers me because I don't think that's the way things should be. We're all locking her into the servant role with our social rewards when she does little chores for us and our slight aversives when she acts more independently. We're locking her into serving us with our smiles, our thank you's, our pat's on the back, our requests. We're locking her into that role just as surely as if we used a padlock and a key.

And we shouldn't cop out by saying she seems to like her role, since that's all she's ever known. If she had a chance to really get into a professional role, she might find that it produced even more rewards for her.

Jim: Yeah, she might find that, but she might not either. She might get fewer rewards as a professional. You don't know for sure.

Marie: Maybe. But there's something else too. I think we have to ask what each of us can give to society. I think we should all try to give as much as we can. But we should also help others give as much as they can too. We should work toward building a world where we all achieve our greatest potential. And Sally's not achieving her's when she's acting as the personal servant for anybody who's willing to use her that way.

Jim: Wow. You sure know how to make me feel guilty with all your flag-waving speeches. But I guess you're right. I'll try. I can't promise I'll succeed, but I'll try. I've got my own behavioral history you know. Playing my old role has produced a lot of rewards for me. So it won't be easy.

- 1 Why should you help people improve their position in life, even when they're not complaining about their current one?

Who, me? A sexist?

ANALYSIS OF VERBAL REQUESTS

That little scene forms the basis of this chapter. It shows that you, like Marie, can use verbal requests as a cue for new acts. And these simple requests often play a major role in helping you get those new acts to occur.

Tell people what acts you'd like to see, and convince them that the new acts will produce worthwhile results. Give the cues for acts that are likely to produce rewards, and make it clear that they'll get rewards and perhaps avoid aversives with these new acts.

And what are the rewards for the desired acts in this case? First of all, the approval of the person making the request — rarely stated, yet clearly there. And corny as this may seem, it sometimes even helps to state that the desired act will produce such approval. If Jim had been a little slow in picking up the message, Marie might have said, "Jim, I want you to know that I really appreciate the fact that you're trying to change your behavior. I appreciate the fact that you're trying to do the right thing. And I know it's hard. In fact, a lot of people wouldn't even try; they'd just deny that there was a problem rather than trying to deal with something so hard. So I really respect you for trying."

So you always imply approval when you ask people to change their behavior, but sometimes you need to make the fact that they can get it as a reward more clear-cut. By the same token, you may often imply disapproval if they fail to change their undesirable acts, yet sometimes you may need to clearly state that the person will get that aversive if he acts in an undesirable manner. For instance, Marie could say, "I'd hate to think you're so insensitive to women that you have to suppress and dominate every female that will let you."

But often more rewards and aversives are involved than those social ones coming from you — the person requesting a change: "It will be best for Sally and best for the office if she has a chance to learn new skills, rather than just going on as your servant." And it will help you to point out such things, because it's most often rewarding to do what's best for others and most often aversive to know you're not doing what's best for others.

- 2 In what way can a verbal request act as an effective cue? What is
  it a cue for?

Avoid a Foolish Behavior Mod Approach

While our little scene mainly shows how you can use verbal requests
to get new acts to occur, it also brings up a couple of other points.
The first is: **Avoid a foolish behavior mod approach.** You've got
English, so use it; don't be coy.

Many people, beginners and pros alike, would try to change Jim's
behavior by giving a social reward each time he allowed Sally a little
freedom, never actually telling him what they wanted him to do. But
that may be a slow way to change behavior if Jim doesn't give Sally
much freedom to begin with, or if you're not around them that often.
Many times you can change behavior much faster if you stop playing
behavioral "Twenty Questions." Instead, you should use cues in the
form of a verbal request. You should make use of the fact that you can
both already speak English. Start with the simplest technique – the
request, and bring out your heavy b-mod guns only if you have to.

- 3 What do the authors mean by "avoid a foolish b-mod approach"?
  Cite an instance and tell what they suggest you do instead?

Deal with It

The second point is that you should get in there and deal with life –
deal with it – rather than sitting back letting the world program you
with the rewards and aversives that just happen to come along. Too
often we go through life huddled in a corner – afraid that any action
on our part might cause us to lose the few rewards life has thus far
happened to toss our way.

Marie might have asked, "What if he gets mad? What if he makes
fun of me? What if he stops liking me? What if . . ." What if you
don't do anything? Maybe the problem will go away. Maybe Sally will
assert herself without any help. Maybe Jim will see the light before I
have to deal with him. Sure – maybe. But maybe not? In fact, most

likely not, and you know it. Remember, the best way to predict future actions is to look at past actions, unless there is a change in the kinds of effects those behaviors produce. (Problem behaviors rarely improve of their own accord. They occur because of their behavioral effects — they'll keep occurring as long as they have the same effects.) So don't cop out on Sally, or the office, or Jim either, for that matter. Deal with the problem. **The best way to predict future acts is to look at past acts.** The best way to predict what Jim and Sally will do in the future is to look at what they're doing now — master-slave routine.

But one thing will change if you don't step in. As Jim and Sally keep conforming to the old-fashioned male-female roles, you'll find it more and more aversive. And as you find it more and more aversive, you'll start being cold to Jim. Then, over a few months, you'll get downright nasty with him. And finally, hurt and defensive, Jim will ask you if something's wrong. And you'll inform him that you certainly can't explain it if he's such a klutz that he doesn't know what's wrong. By that time you'll be right because you'd be too upset to begin any sort of effective behavior change procedure; you'd just end up clubbing him with aversives."

The standard approach is to let things ride — avoid the chance of a hassle. And the final result is that people keep acting the same way, a way that makes them harder and harder to bear. So instead: Move in on it. **Deal with it.** Don't let it get worse.

- 4 Why should you "deal with it" rather than waiting for it to get better?

SELF-RECORDING

But suppose Jim has trouble changing the way he acts. Suppose he can't overcome his sexist ways. What then? You may need to arrange for some **feedback**. In other words, each time he talks with Sally, Jim should note whether he acted in a correct or sexist manner. The best way for him to do this is to record how it seemed to go. He can use

a piece of paper or a response counter that he can wear around his wrist. (Jim can push a little button on the response counter which tallies each response. Such counters are often golf counters you can get in sporting goods stores; other wrist counters make use of beads that you move to tally responses. People have done self-recording with wrist counters to help them control all sorts of acts like swearing, making negative remarks, eating too many calories or junk foods and even thinking unhappy thoughts. Two counters would work well for this project — one for sexist talk and one for correct talk.) He should record the number of times he acts in a sexist manner and the number of times he acts in a nonsexist manner; he should then plot those numbers on a graph every day. Most likely, Jim will then see an increase in the times he acts correctly with Sally and a decrease in the times he acts in a sexist manner.

Why does self-recording work? Self-recording causes the acts Jim records to have more cue control over what he does. Once he starts to record his own actions, he becomes more aware of them — that is, he can say to himself that they are occurring. So the acts he's recording become cues for making some feedback statements, such as "Oh, oh. That looks a little sexist. I'd better cool it"; or "That wasn't a sexist statement — I'm improving!" And these self-given feedback statements may cause Jim to stop his sexist routine once it has started.

And those statements may also act as self-given rewards and aversives. But how can self-recording help him stop his sexist statements **before** he says them? Perhaps once he begins the recording procedure, the cues that once caused him to make a sexist comment may now become cues to control his nonsexist actions. For instance, Jim needs his pencil sharpened and Sally isn't doing anything except writing the annual budget request — in the past this would be a clear-cut cue for him to ask her to "be a sweetheart and do him a little favor." But now these same stimuli cue him to suppress what he used to take as his male birthright. There may also be other cues once he starts self-recording. Often before he speaks, Jim rehearses the words silently to himself. Thus he may stop his speech before he says it out loud.

- 5 Describe how someone might use self-recording to manage his or her own actions.

- 6 Cite two ways in which self-recording might help someone re-
  duce the rate of an undesirable act.

GETTING RELIABLE SELF-RECORDING

People often have a hard time making correct judgments about their
own actions. So Jim may need a little outside help before his nonsex-
ist and his sexist actions acquire precise cue control over his self-
recording. Most likely the problem will involve failing to record sexist
acts rather than classifying nonsexist acts as sexist. So Marie may
need to work with him on that. She can ask him to show her his graph.
Then they will need to talk it over, if she doesn't agree with what Jim
has recorded. Suppose Jim recorded only two cases of sexist acts for
yesterday, but she can recall at least six. She should point these out
to him, explaining, in a nonaversive way, why they fit into the class
of sexist acts.

For instance, "You and Tom and Sally were sitting at the work-
table, when you said, 'Hey, I've got a really good idea. Listen to this.'
And then you just talked to Tom, ignoring Sally as if your good idea
were too complex for her."

"Oh, come on now, you don't expect me to . . . Listen, Tom and
I have been talking about the problem for weeks. And Sally doesn't
care about those sorts of things."

"She may act like she doesn't care because you ignore her when
she shows the least bit of interest. Now I don't mean you haven't
gotten better. You've gotten a lot better. At least you've stopped
giving her aversives when she shows interest. You've stopped saying
things like, 'Sally, you don't have to worry your pretty little head
about those heavy problems.'"

"I did say that one time, didn't I? You have a vicious memory."

"Yeah, but you aren't coming on that way anymore. And I guess
I'm asking for you to go even further; go out of your way to involve
her in those high-level talks, even if she isn't taking the first step. Help
her overcome her history; you helped put her there."

"You ask a lot of a person," Jim said.

"Yes, I do; at least I ask a lot of people who I think can do it. And here's one more thing I'll ask of you. I think you're making too big a deal out of how well she makes the coffee. You're laying too many rewards on her for the housewife-around-the-office role."

"But you're always telling me I should give more social rewards to people."

"Yeah, but you want to be careful not to give so many rewards for only some types of acts."

"Hey, I never told her to make the coffee every morning."

"No, but we've all programmed her into that role with our praise. I know I do it too, and I'm trying to be careful."

"Should I stop the praise?"

"No, just don't make such a big deal out of it. And let's all take turns making the coffee from now on."

"You really do ask a lot of a person, don't you?"

"I wouldn't ask that from someone who was just average."

★   ★   ★

But even that little exchange may not be enough to help Jim move in on his own actions with no further problems. Marie may have to give him a little feedback each day as to how well he's doing with his recording.

- 7 Why is it good to give feedback to people who are trying to change their behavior?
- 8 Cite an instance of how we might be responsible for programming someone into playing an undesirable role even though we never asked her to.

SOCIAL REWARDS

Marie may need to add a few social rewards on top of the other procedures we've discussed, just to help Jim along. Why? Because he's a social creature too. So a few social rewards will help him maintain his desirable actions. We can all use a little social support now and then.

"Jim, I sure do like the way you're getting into this behavior change project. You're really turning your act around. Even Sally's starting to get more and more like a professional, thanks to your efforts."

Jim may respond to his friend's praise in several ways. He may say, "Gee, that makes me feel real good. Thanks for noticing my efforts. And thanks for giving me a little support." (But Marie shouldn't be too let down if Jim fails to give her that sort of a rewarding response. Only the rare person will respond to such praise with a "thank you.") Or, he may act as if Marie had said nothing; but that's okay — a reward is a reward, whether or not the person getting it says thank you. Her reward will still make his nonsexist acts more likely, and it will also make him feel good. So she shouldn't let his silence fool her — Jim likes her praise, whether he knows it or not.

Jim may even start criticizing himself because he's not used to praise and so he hasn't learned how to handle it. "Oh, I don't think I've done anything. I just did what you told me to do. I should have done it without your having to tell me about it." And she shouldn't let his self-put-downs fool her either — he still likes her praise whether he knows it or not. She still hit the mark with her little social reward. Or, he might act suspicious — "Don't put me on with that phony social reward stuff. You don't really mean that; you're just trying to control me. I know you behavior modifiers."

We should distinguish between social approval as mere flattery and proper social approval in a reinforcement procedure. (We'll cover this more in a later chapter.) So Marie may have to help Jim see how they differ. "No, I'm only telling you what I feel. I really do like what you're doing. I really do think you're turning your behavior around. And I hope it's not just wishful thinking on my part, but I think Sally is starting to show some change. So it would be phony of me not to tell you how I feel, just because you might put me down. Besides, you've earned a little praise; that's the least I can do."

Despite all his talk, Jim still likes the praise — he wants to believe his friend isn't putting him on. So Marie is still on target with her praise. But what would she need to do if she wanted to be more certain that her praise was really acting as a reward for Jim? She would

need to wait and see if Jim maintained his improved performance or even got better in his work with Sally when she kept up her praise.

But often in day-to-day behavior-change projects you must use rewards you can be sure of without testing them out every time. And praise and approval are such rewards. A great deal of research has been done showing that social rewards are very useful in helping all sorts of people — normal children, retarded children, adults with behavior problems, teachers, hospital attendants and even behavior modifiers. But the mistake most new behavior modifiers make is holding back their use of social rewards because the other person has not learned how to accept praise and approval. So Marie may not only have to help Jim learn how to act in a nonsexist manner, she may even have to help him learn how to accept social rewards with grace.

- 9 What are at least three different ways people might act when you praise them.
- 10 What mistake do most new behavior modifiers make concerning social rewards?

BEHAVIOR CONTRACTS

Now maybe Jim and Marie have been going along like this for a few weeks and Jim hasn't gotten much better; he still needs to improve. Then Marie may need to use a stronger procedure — a **behavior contract** — a procedure that has helped all sorts of people improve their actions: children, husbands, wives, juvenile delinquents and college professors.

Marie: Jim, you're doing real well, but I think we could make even more progress if we used a behavior contract.
Jim: Oh, oh! What's that?
Marie: Just what it says really. A contract about behavior. We specify the desired behavior, we specify the rewards that will occur if the behavior occurs, and we also specify the aversives that will occur if the desired behavior doesn't occur.

Behavior contract: an agreement specifying 1) the acts a person should do and should not do, and 2) the added rewards or aversives those acts will provide.

Jim: And so you want me to — what did you say — treat Sally in a less sexist manner?

Marie: Yes, but we need to specify the desired behavior in more detail.

Jim: I should treat Sally 'more like an equal and less like a servant.'

Marie: Yes, but we need to give even more details, so we'll be sure to agree when you've fulfilled your contract. We need to say what acts involve treating Sally like an equal, and what acts involve treating her like a servant.

Jim: Do we really need to go through all this?

Marie: Well, you still have room to improve and this is one of the best methods for improving. And we really need to be sure we agree on all the details.

Jim: It seems a little picky, but I'll give it a try.

Marie: Good. So what do we call treating Sally as an equal?

Jim: Well . . . asking her the same sorts of questions I ask the guys — hard questions about our work. Telling her about some of my new ideas. Asking for her help on things where she'll need to use her professional skills. Praising her for starting projects on her own. And here's another one: not letting her cop out on fixing some of the equipment every time she giggles and asks if there's a man around who can help her.

Marie: Yes, I think you've got it, even on the last one — I'm afraid that's what you call treating her like an equal. Now what do we call treating her like an inferior and like a servant?

Jim: I suppose that when she asks a technical question, I shouldn't pat her on the shoulder and tell her not to worry about it. And I shouldn't ask her to do things for me that don't make use of her professional skills, like I shouldn't ask her to get me cups of coffee and sharpen my pencils for me.

Marie: I think you've got it. Now let's specify **how much** good behavior we can try for and **how much** bad behavior we might put up with — at this stage.

Jim: Okay, let's try this: I'll act in a nonsexist manner at least 10 times a day, and I'll never act in a sexist manner.

Marie: You're courageous. But most people blow it by trying to improve too fast; they fail to meet their goals and then they drop the contract because of their aversive failure. Instead of 10 good interactions, why don't you go for five per day? And instead of no bad interactions, why don't you try to hold it down to two per day? I think you can reach those goals. Then after that we can raise our standards.

Jim: Now what about those rewards and aversives?

Marie: You should get a reward if you get your nonsexist behavior above your five-per-day goal, and your bad, sexist behavior below your two-per-day goal. If not you should get an aversive.

Jim: So what will the reward and aversive be?

Marie: How's this — for a reward, I'll buy you a cup of coffee; for an aversive fine, you buy me a cup?

Jim: This whole thing seems a little silly. Do we really need to go through with it?

Marie: I think it will help you get control over your actions. I know you can afford to buy your coffee and mine too, but it's sort of like a bet. And the value of the reward and fine are mainly symbolic. They're just ways of stressing the fact that you won or lost; and I think you'll find they get you working pretty hard on bringing your behavior under control.

Jim: Okay, I'll give your behavior contract a try.

Even little contracts like that often help a great deal, as they make the goals much clearer. In turn, the clear goals cause Jim's actions to have much more cue control over future actions; those clear goals have especially good cue control when Jim gets close to the end of the day with only one good remark, or when he reaches his limit of two bad remarks by the morning coffee break. The added reward of the free cup of coffee also makes the contract more fun to continue.

Marie might add even stronger rewards and aversives if Jim keeps having trouble controlling his actions, at least if he's still willing to work on it, and if she has the power. For instance, he might get a five-

dollar bonus if he meets the contract, and he might pay a five-dollar fine if he fails to meet the contract. Heavy business, but sometimes you need to get a little heavy.

- ■11 Define behavior contract and cite an instance of one.
- ■1.2 What error do most people make in terms of setting their goals for improvement when they design their own behavior contracts?
- ■13 Cite an instance showing why a behavior contract can help a person by making their goals more clear-cut.

THE BIG SCENE

We haven't been talking about science fiction or never-never land. The problem is real and the solution healthy. Every setting is full of problems like Jim's, whether the setting is your job, your classroom or your family. It doesn't hurt to have such problems. But it does hurt to avoid dealing with them. Such problems can build up and really destroy a setting.

So solve those problems; deal with them. He leaves the office a mess and bums everyone out — so deal with it before the office and the people in it become a shambles. She takes over your classroom discussion with off-the-wall put-downs, never saying anything pleasant, bumming out the teacher and the students — so deal with it before she ruins the whole term. Some of the research people aren't plotting data on a daily basis like they should — so deal with it before such a backlog develops that they'll never catch up. One of the behavior mod staff is starting to miss meetings with people who are coming in for help — so deal with it, before people stop coming. Someone — your husband or wife, your brother or sister, your roommate — someone isn't doing his or her share of the chores — so deal with it before you blow your top.

And this isn't 1984-Brave-New-Worldsville either. Just because it doesn't seem natural doesn't mean it's wrong. Beer didn't seem natural the first time you tried it, either. Neither did spinach. And it seems like you shouldn't have to tell people when they're screwing

up. But the cold, hard truth is that you do have to. It seems like you shouldn't have to mess around with feedback, social rewards and behavior contracts, but you do have to. You have to if you want to put together a good scene. And, it won't help that much to leave the scene or get rid of the people who are in it; all scenes have those same problems. Sooner or later, you're either going to have to deal with it, or put up with it or become a hermit. So deal with it.

Deal with It Now

The reluctant may say we've only talked about one problem, but any setting has many, many problems, and we can't deal with them all. Perhaps not. But you can start. And you can start with the ones that bug everyone the most or with the ones that you may be able to take care of with the least effort. But do start. Do deal with it.

"But it all seems so artificial — so unnatural."

So what! Clothes, cars and central heating are all artificial, unnatural, yet you feel okay about them. And as you get into a behavioral-activist approach to life, you'll also feel okay about that. So deal with it. A whole setting becomes most effective when many people in that setting are behavioral activists. You build a behavioral culture in your setting, so that it gets to be second nature to approach both personal and work problems from a behavioral point of view. So that from a behavioral point of view you all do the right thing with as much comfort, ease and grace as you now show when you say "thank you" to someone for passing the salt at the dinner table. And you can do this in your office, in your classroom, in your home, anyplace.

Yet to build a total behavioral culture in a setting takes time. It may take one, two, three years or more. But you'll always be seeing progress in spite of many setbacks. There are not many behavioral settings of this sort, but they're starting to happen. And they're good to be in. It's also fun to build a behavioral community. But it's frustrating. And it takes time and hard work. So start today. But start with tact, because you'll need to convince most of the other community members. And do it now!

■14 How can you answer the following objection: "You shouldn't use behavior mod to deal with problems of your friends, relatives, and colleagues because it doesn't seem like that's the natural way to get along with people and it seems too artificial."?
■15 Why should you "deal with it"?

CONCLUSIONS

In this chapter, we've looked at some of the basic approaches we use in getting new behavior to occur:

1. We saw that the first thing is to simply **ask** people to do what you think they should do. Let them know what the problem is, and suggest how they can make things better.
2. You can also use self-recording. It often helps people increase acts they would like to increase and decrease acts they would like to decrease.
3. You can give them **feedback** about their performance to help them improve their recording and to increase the amount of cue control for bringing about the right acts, while suppressing those you don't want to occur.
4. **Social rewards** will help the person improve his performance even when he isn't able to receive those rewards with grace.
5. Sometimes you need to add other rewards and fines with the use of a behavior contract.

But you should always **avoid a foolish approach** — avoid using complex behavior mod techniques when a simpler method such as a verbal request will work. The odds are the problem won't get any better, until you deal with it. But the odds are you can really make it better when you do deal with it.

chapter 12
prerequisite behaviors and shaping

Introduction

Helping a Disabled Child Learn to Walk

Behavior Analysis
    Task Analysis
    Behavioral History

Behavior Modification
    Assessing Baseline Performance
    Adding Rewards
    Shaping
    Shifting Control to Natural Rewards
    Size of the Project

Shaping with and without Physical Aids

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A Child Who Can't Read

Behavior Analysis
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Behavior Modification
    Interacting with Your Host

Preacademic Behaviors
    Assessing Baseline Performance
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    Shaping

Academic Behavior
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Objections to Added Rewards

The Importance of Dealing with Prerequisite Behaviors

Conclusions

Enrichment
    Overview
    Natural Shaping
    Behavioral History
    Tricks for Becoming a Successful Behavior Modifier

INTRODUCTION

Nancy is five years old, but she cannot walk, and her doctor says she will never be able to walk. She has cerebral palsy (a paralysis due to a defect in part of her brain). Nancy cannot walk.[1] Nancy's doctor is right — Nancy will never be able to walk. Not if she always stays in the normal world — a world where most children don't have her prob-lem — a world where most children can learn to walk with no trou-ble, except for a few tumbles here and there. Nancy will never be able to walk unless she gets into a special world — a world designed to help her learn to walk — a world more generous than the one that taught you and me how to walk — a world more patient — a world more helpful in her learning each of the skills she must have before she can later learn to walk. In this chapter, you will learn how to de-sign such a world.

    In this chapter, you will learn how to help people like Nancy, help them do things they would never do without your efforts, with-out your help in designing a more generous, more patient world. You will learn how to use behavior analysis and behavior modification to help people learn the acts they need first, before they can learn more and more complex acts, before they can do the final acts they need. You will learn how to use behavior analysis to:

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[1] This is based on O'Neil, S. The application and methodological implications of behavior modification in nursing research. In M. Batey (Ed.), *Communicating nursing research: The many sources of nursing knowledge.* Boulder, CO: WICHE, 1972.

1. Analyze the task, so you can find all the acts the person must be able to do.
2. Analyze the person's behavioral history, so you can discover why she may not have learned those skills or acts.

And you will learn how to use behavior modification to:

1. Measure baseline, so you can discover what acts someone can do now.
2. Add extra rewards to support the learning of the new acts.
3. Design the details of a training procedure to move from the prerequisite acts to the final acts. (By prerequisite acts we mean prerequired acts — usually, simpler acts a person must be able to do before she can do more complex acts.)

HELPING A DISABLED CHILD LEARN TO WALK

Suppose you are a behavior modifier. Then what would you do if Nancy's parents came to you for help? You would design a special world for Nancy — one that could give extra rewards for acts that showed even the slightest progress toward walking. In this special world, Nancy would get rewards for her efforts — efforts that would not produce rewards in the normal world. The normal world may only reward the finished act — not progress toward that finished act. In the normal world, we get rewards for walking only when we manage to walk to some place that has those rewards, only when we walk from a less rewarding place to a more rewarding place. But in your special world, Nancy will get the rewards she needs in order to learn. And in the next sections you will learn how to design this special world.

- **1** In what way does the special world of behavior mod differ from the normal world in terms of the acts that get rewards?

BEHAVIOR ANALYSIS

First we do a behavior analysis of Nancy's problem.

Task Analysis

In this behavior analysis we will first do a **task analysis.** In a task analysis you ask what are the details of the task she must perform and, sometimes, what are some of the cues for performing those tasks?

Task analysis: a task analysis usually has two components: (a) find the basic acts that make up a complex set of actions; (b) find the proper cues for those basic acts.

So task analysis shows that Nancy must be able to:

1. Rise to her knees.
2. Get to her feet.
3. Walk with a crutch.

So, at least two acts must precede walking — at least two prerequisite behaviors. Note that these acts form a behavior chain — a stimulus-response chain where each response produces a stimulus condition that cues the next response in the series:

Response (rising to her knees) cues,
Response (getting to her feet) cues,
Response (walking with a crutch).

- 2 Define task analysis and give an example.

Behavioral History

As the second phase, our behavior analysis often involves looking at the person's behavioral history; you ask why hasn't Nancy learned to do these prerequired things — these prerequisite behaviors?

Well, at first she might not have been physically able to perform this complex behavior chain, not before she had surgery. And now she doesn't need to; she has another means of getting around; she scoots on the floor. So now she still won't walk, even though she might be physically able to. Why? Because she can get around by

scooting on the floor. But why does her scooting make it less likely she'll learn to walk? Because scooting produces stronger immediate rewards than does trying to rise to her knees — a prerequisite to walking. And so, of course, the act that produces the stronger immediate rewards wins out. Scooting wins.

- 3 Cite an instance showing how persons may have learned acts that will now prevent them from learning more effective acts.

BEHAVIOR MODIFICATION

After the behavior analysis, you should design and start a behavior mod program.

Assessing Baseline Performance

You always begin a behavior mod project by assessing or measuring the person's baseline performance — her performance before you try to help her. That way you can:

1. Find out what the problem is.
2. Find out how bad the problem is.
3. Be prepared to see whether your solution to the problem is working.

So in the first phase of this behavior mod program, you should find the prerequisite behaviors Nancy can actually do or perform. Nancy rises to her knees only 20% of the time when you ask her to (even though you praise her and let her play with a cupful of marbles whenever she does as you ask). And she never gets to her feet or walks holding on to a stationary object (a cabinet). So, Nancy does the most basic task now and then, but not the more advanced tasks. At least you have a place to start — raising herself to her knees.

- 4 What are three reasons for assessing baseline performance?

Adding Rewards

Next select a set of added rewards you will use in helping Nancy learn to walk. Of course you will use social praise, but you add a few more that might be even more powerful — like ice cream and the chance to play with the cup of marbles for a few minutes.

Shaping

Next start a shaping procedure for helping Nancy gradually learn each response she will need in the stimulus-response chain that ends in walking. Your shaping procedure for Nancy has several phases. You go to the next phase in the sequence only after she has mastered the ones that come before.

1. First, give Nancy a spoonful of ice cream every time she rises to her knees.
2. Next, give her a spoonful of ice cream only when she pulls herself up to her feet by holding on to the cabinet.
3. Then, give her ice cream only when she takes a few steps while holding on to the cabinet.
4. Then, use a harness consisting of a belt, two shoulder straps and a chest strap that you hold while also holding her left hand.
5. Then, loosen the straps of the harness a little bit at a time and remove them one by one as she learns to walk with less and less support. As she progresses say, "Good," whenever she walks with less weight on the remaining strap, and give her ice cream when she walks across the room.
6. Then, provide only your finger for Nancy to hold on to for support.
7. Next, allow her to hold on to a 12-inch stick while you walk beside her holding the other end. (Move to the next phase when she puts less weight on the stick.)
8. Then, fasten two wooden handles on a spring, giving one to Nancy to hold on to and keeping one yourself.

9. Then, give her a crutch and help her by picking it up and putting it down as she moves.
10. Then, gradually decrease the amount of help you give her until she walks with the crutch alone. When she reaches that stage, stand at one end of the room and give her approval, ice cream and a chance to play with the marbles when she walks to you without your help.
11. But an interesting problem develops. During the phases before you started with the crutch, Nancy had walked with her arm outstretched to support herself. And now she keeps doing that even though she is defeating the purpose of the crutch she holds with that arm. So fasten a 1-pound weight to the bottom of the crutch, making it hard for her to hold it out for very long.
12. So, in the final phase of your shaping procedure, help Nancy learn to walk without the weight on the crutch.

And, at last, you and Nancy achieve your goal: the little girl who would never be able to walk is now walking; she's using a crutch because she is not able to maintain her balance without one when she is standing still. And her gait is still spastic, but she is walking on her own. She is walking. And you did it using a very powerful behavior modification procedure − you did it using **shaping**.

Shaping: a procedure for producing a new response. First provide a reward following any response that is at all close to the new response, or provide a reward following a response that is part of the new response. Gradually provide rewards only for those acts that are closer and closer to the new response, until at last only that new response can produce a reward.

Note that there are two ways that you can shape up a new response: (a) you can start with a response that resembles the new response; and (b) you can start with a response that is part of the new response. For instance, the act of walking with a harness is similar to the act of walking without it. And the act of rising to her knees is part of the total act of getting up and walking.

■ 5 Define shaping.

Shifting Control to Natural Rewards

Of course, you want to get Nancy to the place where she will walk with her crutch even though you are no longer giving her food rewards. After all, no one stands around handing you ice cream every time you walk across the room. But, on the other hand, you do get some rewards whenever you walk across the room: you turn on the TV, you turn on a light, you get some ice cream from the freezer, you pick up a book, you look out the window, you put on a sweater — some reward maintains your walking, otherwise you wouldn't do it. So, as much as possible, you want to get Nancy to the point where the same sort of normal rewards will maintain her walking.

The first thing you can do is stop using the ice cream. Simply give her a little praise and approval, a little affection, whenever she walks with her crutch. And when you do this, you find that she walks 100% of the time.

In addition, you'll want to make sure Nancy gets plenty of normal rewards strong enough to maintain her walking, when you're not around. You want to make sure she doesn't get rewards for scooting, whether those rewards are social approval or other normal physical rewards.

And you may have to make sure that, once in a while, people give her social approval for walking, even after your formal training program is over. She may need this added reward of social approval even though you and I don't need it. Why? Because it's still much harder for her to walk with a crutch than it is for us to walk without a crutch. So don't be too surprised if people have to provide a little booster social reward now and then.

■ 6 Cite an instance showing how you would shift from added rewards of a behavior mod project to the built-in rewards of the normal world.

Now that you've studied the science of behavior analysis — the use of the basic principles of behavior to understand people, you're ready to study the practice of behavior modification — the use of those principles to help people. Since the basic principles of behavior allow us to understand why people act as they do, those same principles will also allow us to understand why behavior mod helps people change the way they act.

In all cases we'll deal with behavior, what people do; and so, in all cases we'll deal with behavior that occurs because of the rewards or aversives involved. People need help when their behavior gets caught in the middle of a tug or war between immediate rewards and aversives on one side and delayed rewards and aversives on the other side, with the immediate rewards and aversives winning, of course. The problem arises when those immediate rewards and aversives will cause people's behavior to go in wrong directions, directions that will reduce their overall rewards and increase their overall aversives.

The immediate aversives cause us to stop studying so that we fail to get the delayed reward of a good grade. Or, the immediate rewards cause us to overeat so that we do get the delayed aversive of too much body fat.

Behavior mod helps by joining in the tug of war, by adding strong immediate rewards or aversives on the side of the weak delayed rewards and aversives, or, by getting rid of some of the original immediate rewards and aversives that were pulling the behavior in the wrong direction.

Though only two decades old, behavior mod has already proved itself to be the best approach in helping people deal with the majority of their psychological problems, in helping people get the most rewards and the least aversives out of life. Behavior mod helps all people, young and old, retarded and normal, ourselves and others, in institutions and in everyday life. Just as behavior analysis helps us understand that our behavior is often caught in the middle of a tug of war, so behavior modification helps us win that tug of war.

chapter 9
issues to consider before starting behavior modification programs

INTRODUCTION

In the first part of this book we talked about some basic principles of behavior analysis. You learned about rewards, aversives and contingency-relationships that join them with actions. Learning those things will help you understand why people act as they do — why you act as you do. Much of what we do has been brought about by chance, by a blind world. Also, most of us could surely do more than we are doing now and do it better than we are doing it now. But to do so, we need a more consistent, less chancy set of contingency-relationships between our acts and their rewards and aversives. We could arrange the world to increase moments of joy and success, while decreasing moments of failure and sadness. All these things can happen, and in the future we may see them happen; we may be able to arrange for more and more people to become happy and productive.

But our first efforts often involve our helping people take care of some of their more severe problems. Many of these problems can only be solved by bringing about changes in behavior. In this chapter we'll begin to discuss behavior modification, the planned use of the

principles of behavior to influence actions. Using behavior modifica-
tion, we can start making desired behavior more likely and undesired
behavior less likely. But before we worry about changing actions, we
have to worry about what actions to change — a subject we'll deal
with in this chapter. We also need to assess what factors, or concur-
rent procedures, will help or hinder us when we set out to change
acts, another topic we'll discuss here.

WHAT BEHAVIOR MODIFICATION IS

We are always giving rewards, aversives and cues that affect what
other people do, think and feel; yet it's unlikely that we claim we're
practicing behavior modification. And that's because we don't analyze
how we are affecting others' acts or admit our part in affecting them.
Only when we look at a specific problem behavior, analyze it in be-
havioral terms, and arrange for conditions that will produce changes
in it do we call our activities "behavior modification."

Behavior modification: planned use of the principles of behavior to
influence actions.

All teachers, therapists and parents change, or modify, the behav-
ior of other people, if they're any good at their jobs. But few use
"behavior modification." We don't define behavior modification in
terms of what people do (changing behavior), but why they do it (the
cues and procedures that cause the modifiers themselves to do what
they do). Let's look at some instances.

Every time little Tulip Tugood smiles or goos or gurgles, her de-
lighted mother coos back to her in baby talk, tickling her tummy.
And, of course, all the neighbors comment on what a happy baby
little Tulip is. From what you learned in earlier chapters, you can
guess that Ms. Tugood is making her infant's pleasing social acts more
likely by using a reinforcement procedure. But she's not using behav-
ior modification. In fact, Ms. Tugood would deny she had any part in

Tulip's gay actions, preferring to think her daughter was born to be happy.

Now the student, Sally Psych, is serious about her science. Last year in Psych 101 she learned that an act will occur more often if it produces rewards. When her son, B. F., was about five months old, he would sometimes lie in his crib and grin at his cradle gym. Sally thought he looked so cute when he smiled that she wanted him to do it more often. So she began increasing B. F.'s smiling acts by using a reinforcement procedure. Every time B. F. smiled, Sally cooed and patted him — strong rewards. Soon little B. F. competed with Tulip as the happiest child on the block. And Ms. Tugood vowed she never saw two such "natural-born" optimists.

Two mothers changed the same acts of their children. By doing the same kinds of things, the parents made smiling occur more often. But only Sally was doing behavior modification, because only Sally was making planned use of the principles of behavior to influence smiling. In other words, Ms. Tugood's acts were brought about by the direct effects they produced. She tickled little Tulip (act) and Tulip smiled (reward of act). So Ms. Tugood's acts were under intuitive control. But Sally's acts were under rule control, even though her acts produced effects much like Ms. Tugood's. Little B. F. smiled, and his smile provided a cue for Sally's act of patting him, in accord with Sally's rule, "If you reward pleasing acts they'll occur more often."

"But," you ask, "both Tulip and B. F. were gay, lovable children; why should Ms. Tugood need to learn the principles of behavior analysis? Why should she use behavior mod? Would she be any better off?" Perhaps not. Ms. Tugood won't need to know about behavior analysis if she should have the good luck to do everything right in raising Tulip. But if something goes wrong — if Tulip begins throwing tantrums in a year or two, or has trouble learning to read, or fails to practice the piano — then Ms. Tugood will be better off knowing the principles of behavior so she can actively apply them when her intuitive actions fail to get the job done. Whether Ms. Tugood ever knows it, she will be a major factor in what Tulip does, says, thinks and feels. If she can analyze how behavior comes about, changes, continues or disappears she will surely have an advantage in rearing her daughter.

Why on earth would a woman like me need to know about behavior mod?

Knowing how her acts affect Tulip's behavior, Ms. Tugood can be a knowing participant rather than an ignorant one.

- 1 Define behavior modification.
- 2 Why would it be better if we knew and actively applied the principles of behavior even though we might not be having any current problems?

THE IMPORTANCE OF PICKING AN OBSERVABLE BEHAVIOR

Before you can change acts, you have to know what acts to change. The first rule of behavior modification is to specify an observable act that you plan to deal with — to increase or decrease. Both Ms. Tugood and Sally could produce a high rate of smiling because they could observe their children's smiles. But nobody can plan to make smiles more likely if they can't see them. So before you can apply the principles of behavior, you must be able to specify the acts you want to change. And you must be able to observe those acts. Why? Because you wouldn't know when to give rewards or aversives if you couldn't tell when the acts occurred.

As his first behavior modification project, Mr. Jones tries to teach his kindergarten children to "know the alphabet." But he makes the mistake of not clearly specifying acts he can observe. He makes the mistake of not specifying the acts involved in "know the alphabet." What acts will produce rewards? Saying "A, B, C," and so on, when he asks the children to recite the alphabet? Writing the letters "A" through "Z" on paper when he tells them to? All of these? Clearly, Mr. Jones can't provide rewards for "knowing" the alphabet, though he can easily provide rewards for saying or writing the alphabet. So he must specify behaviors he can see or hear — "knowing" isn't something anyone can see or hear; so "knowing" isn't something anyone can observe.

The major reason we must specify acts we can observe is so we can tell when they occur, so that we can apply behavior-change procedures to them. But there are other reasons why Mr. Jones must

specify behaviors he can observe. He may provide rewards for differ-ent acts for different children if he doesn't clearly specify specific acts that should produce rewards. His giving of rewards for different acts may provide conflicting cues. So some of the children may give up while others may spend a great deal of time checking with Mr. Jones to see if they "know the alphabet." Children may bother Mr. Jones all day, trying to collect their rewards, making it likely that he too will give up, withdrawing his offer of a reward. And then the children will have reason to doubt his word in the future. Mr. Jones may say he'll never use behavior modification again, vowing it doesn't work. He'll think children spend too much time worrying about re-wards and too little time being concerned with "learning for its own sake." But Mr. Jones would have avoided many hassles if he had specified the acts he wanted to see, if he had valued his students' learning enough to learn to use behavior modification well.

Specifying observable behavior also helps us deal with another issue. Some people say behavior modification works with some prob-lems, like getting babies to smile more often, but that it can't work with more important things, like "self-esteem," "attitudes," "feel-ings," "identity" and so forth. But these kinds of words are really only summary terms for large groups of acts. For instance, what do we mean when we say some persons have "low self-esteem"? We mean they behave in certain ways that others don't; for instance, they may talk about their past failures, rather than their past successes; they may voice fears about taking on new projects, their favorite phrase being, "I can't do anything right"; they may talk about others being prettier, brighter and nicer than they are; they may blame themselves for events they couldn't have possibly controlled, and so on. These ways of acting cause us to say they have "low self-esteem," but we're using the term only as a label for patterns of actions.

We can help persons with low self-esteem by looking for the spe-cific acts we observe — acts that give rise to that label. And, of course, we also have to look at the cues and behavioral effects for those acts. Once we've specified acts we can observe, we can begin to change them, since now we know when to apply our behavior-change procedures and what procedures to use, depending on whether we

want to make those specific acts more or less likely.

Suppose you and your Aunt Sadie want to do a b-mod project on her "bad attitude toward men." Have you specified a behavior you can observe? No. You can't observe an "attitude." But you can observe the acts that cause you to say she has a bad attitude. So you must shift your focus away from "attitudes" and to acts. What acts make up Aunt Sadie's "bad attitude"? And what may be some of the cues and behavioral effects that go along with those acts. You should sit down and make a list, being as specific as you can. Your list might look something like this:

Bad attitude:

1. Aunt Sadie criticizes my male friends.
2. She often says, "All males are animals who are only after one thing."
3. She often says, "Wars and starvation are due to men."
4. She asks that we don't bring any of our male friends along when we come to visit her.

Cues and behavioral effects:

1. We argue with her when she makes sexist statements — maybe our attention is making her sexist behavior more likely, rather than less likely.
2. We never bring our male friends to her house, again rewarding her demands — but maybe if we did their presence would be a cue to suppress her sexist acts, and she may even find their presence is rewarding.

You've discarded the summary term, "bad attitude," and specified some acts you can observe, as well as their possible causes. So now you can begin to modify Aunt Sadie's "bad attitude," by applying behavior-change procedures to the acts you've specified. For instance, you can stop arguing with Aunt Sadie's sexist views, instead ignoring them or changing the subject (extinction procedure). You may also stop rewarding her statements about not bringing your male friends around by bringing them over, perhaps making sure the first ones have many common interests with Aunt Sadie.

So we can use behavior modification to change all sorts of behaviors, both single acts, like "smiles," and groups of acts, like those that make up "attitudes." But we must specify acts we can observe before we can change any of those acts. Specifying observable behaviors is one of the most basic rules of behavior modification.

- 3 Why is it important to pick observable acts to change?
- 4 Can we modify things like attitudes and self-esteem? Why or why not? And if not, how can we tackle such problems?

RECOGNIZING OBSERVABLE ACTS

Here are some common problems; see if you can pick out those which specify a behavior you could observe and provide effects for:

1. Paul doesn't wash the pots and pans when he does the dishes. What's the problem behavior? Can you observe it when and if it occurs? Can you reward it? Yes, washing all pots and pans specifies a behavior that you can observe and reward.

2. Mary leaves her clothes all over the dorm floor. What must she do to keep the room looking better? "Do her share," you say? Say more — you must specify the **behavior!** "Put her clothes away?" Yes "putting away clothes" specifies a behavior that you can observe and reward.

3. Prudence swears at the other kids on the playground. If she doesn't pipe down, she soon won't have any friends — mainly because the other kids' mothers won't allow their children to play with her. Can we apply behavior modification to swearing? Swearing is a concept a little more abstract than washing pots and pans, though not nearly so abstract as Aunt Sadie's attitude. First, swearing is clearly behavior. In fact, it's a group of many acts that we call a response class, any swear word that Prudence comes up with fitting into that class. Your b-mod project will be easier if you specify the exact words you will observe and change. And because swearing is an ob-

servable group of actions, you can use the principles of behavior to reduce it.

We can sometimes define behaviors not only by the observable acts involved but also by their observable results. In other words, some acts leave a lasting mark on the world, while others don't. For instance, your writing acts leave a lasting change in the world when you write a letter. But your speaking acts don't generally leave a lasting change when you make a phone call, unless you're tape-recording the call. We define acts in terms of their **form** when they don't leave lasting changes we can easily observe (their form being what they look or sound like). But we can define other acts in terms of those changes they leave behind — or we can define them both in terms of the changes they leave behind and their form. "Picking up clothes" and "washing pots and pans" are acts we can define both in terms of their form and their observable changes in the world. Picking up clothes (an observable act) produces a cleaner room (lasting result of act — of course, nothing lasts forever).

But swearing differs from picking up clothes and washing pots and pans, because swearing doesn't leave lasting changes in the world. The observable change in the world after Prudence swears may be a rise in blood pressure of the local mothers. But pounding veins are harder to observe than clean rooms or clean pots (for one reason, the change doesn't last as long). So we would most likely want to define the acts involved with swearing in terms of their form — in this case, what they sound like — since defining them in terms of their observable changes on the world would be very hard. We may want to specify the actual words we'll call swear words to help us easily recognize them when they occur. Or we may specify a definition of swearing that will help us recognize profanity — for instance, "those words that name bodily excrement, sexual acts or take the name of the Lord in vain."

The following examples will give you more chances to practice recognizing observable actions. For each problem, state whether you can observe the action — whether you can see or hear it, then try to define it in terms of the way it has changed the world, or in terms of

its form. If the example **does not** specify observable behavior, specify some acts that might be involved — acts you can observe and follow by effects to make them more or less likely.

1. batting a pitched ball
2. learning arithmetic
3. biting fingernails
4. running
5. relaxing forehead muscles
6. making friends

Let's discuss those examples. "Batting a ball" is an act you can see. You define it partly in terms of its general form (the swinging of the bat) and partly in terms of the results of the swung bat on the ball (the ball moves in a new direction as a result of the act). So it would be fairly easy to count the number of times Tulip batted the ball.

But "learning arithmetic" is another matter. You've not specified any acts you can observe. You might begin by stating that the behavior you want to obtain is "adding behavior." Then, you must be more specific, perhaps saying the children must answer aloud the sum of any two single digits they see connected by a plus sign. You would probably want to specify quite a few more behaviors before we'd agree the children had "learned arithmetic."

"Biting fingernails" is much like the first example, in that you can define it both in terms of its form (acts we call biting) and in terms of the results of the acts (nails that don't extend beyond the point where they are attached to the skin). "Running" is an act (or group of acts) that you define in terms of its form. Running doesn't usually change the world in any unique way (unless you run across a clean floor with muddy shoes).

Like running, "relaxing forehead muscles" is an act defined only in terms of its form, the movement or lack of movement in the muscles themselves. But whatever your forehead muscles do, they don't make easily observable changes on the world. If you wanted to change the actions of those muscles, you'd have to define the acts in terms of movements. This could be hard to do and that's why biofeedback

machines are often helpful, where electrical energy from the muscles is transmitted through some wires to an amplifying circuit and onto a screen, much like a TV screen. In other words, small actions of the body become inputs to a machine. The machine then changes the inputs into lines on a screen that you can clearly see. The machine works like a magnifying glass in that it makes clear what is hard to see. It differs from a magnifying glass in that it only shows you the part of the forehead you're interested in — the action of its muscles. By using biofeedback, you connect the movement of forehead muscles to some part of the world, so that the muscles affect the world in an easily observable way — by producing lines on a screen.

The last example, "making friends," doesn't specify any acts we can make more or less likely. Even so, it is a very real problem for some people, and it will be easier to help them solve it if you specify acts you can observe. Look around you and pick out a person who appears to have many friends. Watch her when she meets new people. Unless she provides rewards of some kind, the new people aren't likely to hang around much. So we want to look at the popular persons and try to define what kinds of things they do and say that are likely to reward other people. They might smile when greeting others, look at them when they talk, respond to what the other is saying rather than changing the subject, and give many compliments. Other acts we often find rewarding are the making of useful statements. A person who has trouble making friends might begin increasing those acts.

Issues Concerning Observable Behavior

All acts are observable and affect the world by changing it in some way. A sight or a sound produces change in the world, just as much as hanging up clothes or washing pots and pans. But, of course, some behaviors are harder to observe than others, probably for three reasons:

1. Some acts are transient, or short-lived, making them difficult to observe. Profanity, a smirk or a frown might be hard to observe because it often lasts for only a second.

2. Some acts are hard to observe because of our limited ways of observing them. A twitch in the forehead muscles is observable, but often we can observe it only with the help of special instruments, like biofeedback machines. A heart flutter is observable, but we can't hear it without a stethoscope.

3. Some acts are hard to observe because they belong to complex learned response classes, such that the individual acts are difficult to specify. For instance, Aunt Sadie's "bad attitude" was hard for us to observe because it was hard for us to specify all the subtle behaviors that composed it. Often a problem related to this one is that acts that belong to such classes are also transient, or short-lived. Therefore, it's often very hard to modify an "attitude" because it's often made up of behaviors that are diverse, subtle, and short-lived, like Aunt Sadie's slight frown or raise of her eyebrows when a man enters the room.

- 5 Behaviors like swearing we define in terms of their _____, while behaviors like washing pots and pans we can define in terms of the way they clearly change the world.
- 6 What is the **form** of a spoken word? A written word?
- 7 Be able to recognize instances and non-instances of clearly specified actions, and be able to suggest how you might improve examples that don't involve the clear specification of behavior.
- 8 Be able to tell whether a behavior is specified in terms of its form or in terms of a way it changes the world.

CONCURRENT PROCEDURES

Many rewards and aversives are available for many acts in our everyday world, and all kinds of cues for these various acts are present. So if we are to change behavior, we must know what we're up against, what behaviors might compete with those we want to make more likely, what cues bring about actions we'd like to suppress. In short, when we want to add behavior modification procedures, we must

look at the behavioral procedures that are acting concurrently with the procedures we implement.

Concurrent procedures: behavioral procedures that are operating at the same time for the same individual.

Concurrent procedures may be composed of reinforcement, punishment and avoidance procedures. Furthermore, they may each have separate cues associated with them. Or they may not. And they may all be operating on, or affecting, a single response, or they may be affecting different responses. For instance, a reinforcement procedure might involve one response, while both an avoidance and punishment procedure might involve a second response. We should say that all three behavioral procedures are operating concurrently on a person's behavior — they are all concurrent behavioral procedures.

We must consider concurrent procedures because they will affect the response we're interested in bringing about or changing. Take the case of Susie, who had an active sweet tooth. Every day she bummed sugarless gum from her mother, a generous woman. As the weeks sped by, her mother wondered if she might use a daily ration of gum as a reward for Susie's putting the dinner dishes in the dishwasher. She explained to Susie that from now on she could earn two pieces of gum on any day she did the dinner dishes. On the first day, Susie was quick to do the dishes and collect her gum. Then several days went by where Susie kept on asking for gum as she had in the past. Each day her mother reminded her of the way she could get her gum. Finally, Susie's asking behavior stopped, since it no longer produced a reward. Her mom patiently waited for Susie to race to the dishwasher after dinner. No race.

So Mom began to watch her daughter, noting that she was still chewing gum quite often. On following up this clue, she discovered Susie's dad was giving their child gum — and it wasn't even sugarless! Susie's mother was no longer a cue for asking. Now her father was. The fact was this: Susie could get the gum in two ways — by washing the dishes and by asking her father. Which do you guess would be more likely to occur? After much lengthy debate, Mr. S. agreed to

stop bootlegging gum to Susie and to join Ms. S. in giving gum only when Susie loaded the dishwasher. Soon Susie did the dishes every night.

This is a very simple example of a concurrent procedure. In one case, the presence of Susie's father was a cue for an asking response that produced gum. At the same time the dinner dishes were a cue for putting them in the dishwasher, an act that also produced gum. In the case of these concurrent procedures, the reward was the same. But one of the acts was much easier than the other. So Susie produced the reward with the least effort. Smart kid.

Now let's look at another example of concurrent procedures. Carol Competent, a sophomore at B.S.U. (Big State University), sits down at her desk to figure out what she should do with the Thursday evening ahead of her. Her roommate is going out for an evening at the bar and has asked Carol to join her. That request is a cue, a cue for a reinforcement procedure. But in looking at her calendar, Carol sees she has a big paper due in her English class on Monday, and she tells herself it certainly wouldn't hurt her to get started on it. So now, along with her roommate's invitation (reinforcement cue), there are avoidance cues for writing — working on upcoming papers in the past has helped Carol avoid bad grades. And because Carol enjoys her English class and finds the topic of her paper interesting, there are also reinforcement cues for working on that paper. Looking again at her calendar, Carol sees she will have a calculus test on Tuesday. She tells herself she should begin studying for that one also — more avoidance cues.

Carol Competent has concurrent procedures available for several acts — going to the bar, writing a paper, and studying calculus, to name a few. Which behavior will she engage in? The act associated with the **strongest** cues. In Carol's case, the strongest cues tonight are for working on her English paper, so that's what she'll do. And how do some sets of cues become stronger than others? It depends on our behavioral histories — on the kinds of effects certain acts have produced, on the closeness of those effects to the acts, and the magnitude of those effects. It also depends on the number of concurrent cues present for a given behavior. For instance, Carol has marked her

calendar to cue her study behavior. She also cues study behavior by saying things to herself, things like — "only five days until the paper is due, and I'd really like to do a good job on it." If her paper weren't due for a month, she probably wouldn't say such things to herself and might study her calculus or join her roommate for an evening of fun; in other words, another set of cues would control a different act.

But what if cues for getting her work done weren't the strongest ones? What if Carol spent her evenings doing everything but studying? If this were true, we behavior modifiers might try to change the value of those cues, just like Susie's mother did when she got Susie's father to stop giving Susie gum. We can change the value of the cues by making sure studying produces stronger or more immediate avoidance effects. Or we might arrange for Carol's non-studying acts to produce punishment effects, like a fine, for instance. But, of course, before we can begin to modify Carol's actions, or Susie's actions, or anyone's actions, we need to know what we're up against, what concurrent procedures are operating.

- 9 What is a concurrent procedure?
- 10 Give two everyday instances of concurrent procedures.

CONCLUSIONS

People are always influencing the actions of others, but we say they're practicing behavior modification when they plan and use the principles of behavior to influence actions. Often we're better off actively changing behaviors than letting chance cues and effects do it — we're more likely to get what we want. But, of course, we have to state specific, observable acts we want to change before we attempt to change actions — because if we don't know or can't observe what acts we want to change we won't know when or where to provide cues and behavioral effects. We also need to know what concurrent procedures are available for acts we want to bring about, maintain or suppress. In this chapter we've looked at issues we must consider before we set up b-mod projects. In the next chapter we'll look at things we need to build into our b-mod procedures.

chapter 10
general issues in modifying behavior

INTRODUCTION

We've discussed some points you should think about before starting any new b-mod program — points that should help you set up a program that works. But how can you be sure your program will produce the changes you desire? Will it keep on working? And what if you're dealing with people who only want to talk about their problems, rather than do something to change them? We'll begin to look at the answers to some of these questions in this chapter, answers that will help you see how to go about changing behavior and what aspects of behavior modification set it apart from our everyday influence on the behavior of others.

INFORMED CONSENT

Suppose you're a behavior modifier and that people come to you to help them solve their problems. Are you ready to begin once you've specified the observable behaviors and the procedures you want to use? No, not yet. You should first obtain peoples' informed consent before you attempt to modify their behaviors.

What is informed consent? It's an agreement between you and the person you're working with, much like a contract. It's where you and that person decide, in writing, what you'll be working toward and how you'll be doing it. On the consent form you state the goal of the program that you and the person have agreed upon, you describe the procedures you will use, and finally, you clearly state any aversive procedures and/or known dangers.

Informed consent protects both the people you're working with and you, the behavior modifier. People must know exactly what they're agreeing to — you don't have the right to change them from bottom up. Informed consent keeps us honest with ourselves and the clients we're working with. At the same time, it keeps people honest with what they want for themselves. Informed consent also insures that you make goals and methods clear, so that everyone is working toward the same end. It's an up-front agreement that you will supply services that will result in changes in peoples' observable actions, and probably what they say to themselves, too.

- 1 What is informed consent?
- 2 What are three items included on the consent form?

CHARTS AND GRAPHS

Behavior modifiers insist on analyzing problems so that they can deal with events they can observe. We do this so that we can detect changes when they occur. It's easy for us and someone we're working with to kid ourselves and agree that the person is improving, since that's what we both want. But our agreement should be backed up by something more clear-cut — something that more clearly shows improvement or lack of improvement.

The best way to tell if behavior is changing is to record the events that show that changes are taking place. We gather data on behavior since that's what we want to change. Usually, we want more of the behavior or less of it, or more of it in some situations and less in others. So we need to find out how often and under what conditions

the acts occur once we have specified the responses we want to change. Therefore, we count how often the response we're interested in occurs. Then we make a graph so we can look at the data and get an overall view of what's happening before we set out to make big changes.

Remember Prudence, who shocked the local mothers with her swearing? Let's say you want to do a behavior mod project to get Prudence to stop swearing on the playground. First you go out to the playground and count the number of times she swears (per hour, per day or per week). Then you make a graph to show what you observed (see Figure 10.1).

Figure 10.1. Prudence's swearing during baseline period.

These data are called **baseline data.** They show what was happening when you first looked at the problem, before you did anything to bring about changes.

Baseline data: a measure of the behavior you're interested in changing before you begin a behavior modification procedure.

You should make such a graph so you'll have a visual picture of how much Prudence swears.

To read the graph, look at the horizontal line (Days), then go up the vertical line (Number of Swear Words Per Day) to see how many times Prudence swore on a given day. For instance, on day one, she swore 15 times; on day two she swore 10 times; on day three she swore 19 times, and so on. You keep watching Prudence on the playground when you're trying to modify her swearing, counting each instance of her swearing. Then you can compare her swearing now to what it was during baseline (see Figure 10.2).

Figure 10.2. Prudence's swearing during and after baseline period.

This graphing allows you to look at the past and present, side by side, without having to remember "what it was like before." For instance, you may forget how bad her swearing was before you dealt with the problem and may feel you haven't made much progress,

even though you have made a great deal of progress. So you need a record of baseline events you can compare with the events that occur after you begin your b-mod procedure.

- ▪ 3 What is the best way to tell if a behavior is changing?
- ▪ 4 When do you take baseline data? What do they show?

KINDS OF MEASUREMENT

You'll need to decide first what acts to look at, or measure, and how to look at them to get data to guide your behavior modification projects. Often, data on the frequency of the act you're interested in (that is, the number of times it occurs) are the best measurement. At other times we need other measurement techniques. Sometimes, for example, we must measure the likelihood of a behavior we're interested in indirectly if we hope to modify it.

For instance, suppose you're a behavior modifier and a person comes to you depressed and talking about committing suicide. Naturally, a very serious problem like a possible suicide attempt calls for immediate action, perhaps even hospitalization. You must still gather as many facts as you can and then make the very crucial decision of what to measure. Clearly, you wouldn't want to measure "suicide attempts" because there must not be any attempts. Instead, you should look for behaviors that are likely to be associated with, or be cues for, suicide attempts. Guesses as to what these behaviors must be must be based on the particular case (and of course only a trained person should make those decisions). But some things you might measure are the verbal and written statements expressing a desire to commit suicide or the time the person spends alone doing nothing. Or, you could record acts like buying a gun or obtaining a prescription to sleeping pills.

You might also measure behaviors the person engages in that might compete with suicide attempts. For example, you might collect data on whether the person belongs to any clubs, has a job he is interested in, has hobbies, has friends and so on. Then you might try to

work on increasing the time he spends in such rewarding activities, rather than time he spends alone, thinking depressed thoughts. These, of course, are only a few ways you might use to deal with a complex problem.

Like suicide attempts, stealing is a behavior you often can't measure directly so if this is the behavior you want to change, you may well have to deal with behaviors likely to be associated with or be cues for stealing. For instance, you might measure the time the person spends walking through the local stores, or the time she spends with friends who also steal, or who wouldn't provide punishment effects for that behavior. Or, you might want to measure the amount of time the person spends doing things that compete with stealing, like schoolwork, watching television, joining athletic or church groups, and so on. The more time she spends in such activities, the less likely she will be to rip off the local merchants.

Once you've decided what you're going to measure and how you're going to measure it, you face a new problem: How do you know your data are correct? What would the data look like if someone else recorded them? Are the data you plot accurate accounts of the events you want to change? Are the events you're recording really tied to the behaviors you should be interested in — like suicide attempts and stealing?

- 5 What's often the **best** measurement to get on behavior you're interested in?
- 6 Why don't you always measure the frequency of an act you're interested in changing?
- 7 What are two things you might measure if you can't measure the frequency of an act? Cite two such acts and describe how you might measure them.

RELIABILITY AND VALIDITY

As you can see, collecting data brings up some new problems having to do with whether the data you've collected have value for you. We

deal with these problems under the headings of **reliability** and **validity**. Reliability and validity of data are important concerns in psychology.

Reliability: the extent to which two measures of the same event yield the same data.

Measuring behavior is perhaps a bit harder than some other kinds of measurement. An act is here one moment and gone the next; it has a very short existence. You may count the number of "A's" on a printed page several times to see if your count is reliable. But you can't go back and count the number of times Prudence swore today, unless you have a tape recording. Prudence swears, and you either count it or you don't. And you miscount if you happen to be looking and listening elsewhere.

But there's another way to find out how reliable your count of "A's" is. You can ask someone else to count them too, and compare your measures. The same goes with short-lived responses. Two people can observe the behavior and record the responses. We call this interobserver reliability.

Interobserver reliability: the extent to which the same data taken by two people agree.

Whether counting "A's" on the page or Prudence's swearing acts, you get interobserver reliability if you and the other observer count the same number of items. Recalling Prudence on the playground, you need to find out if someone else's record of swearing looks the same as yours. Instead of going out every day to the park to record her data, you could ask her mother to record the data on Prudence's swearing. Then you could do a **reliability check**. You could go out two or three times during each phase of the program (baseline, procedures, follow-up) and count for yourself. You and her mother should get a similar count on the data that you both count; to the extent that you do so, the reliability of the data is good. One thing to remember, though, is that your counting should not affect mother's, or

vice versa. In other words, you and the other observer should make your counts alone, before comparing them. Prudence's acts should be the only events that cue your counting, and what somebody else is counting should not affect how you count.

Of course, if your records differ greatly you have no way of knowing what an accurate count would have been. And you shouldn't assume mother is a poor data taker, since all you know is that someone's data aren't reliable. So now you must figure out how to better define the behavior and how to better observe it so that you can make a reliable count. You must have reliable data before you can say your behavior modification procedure worked. Changes you see after your program treatment could be due only to your poor measurement if your data aren't reliable.

You may still wonder how valid your data are after you've seen how reliable they are.

Validity: the extent that our data are related to the behavior we are concerned with.

Often you don't have to worry about how valid your data are because what you observe clearly relates to the target response: it is the target. Consider Prudence's swearing. You want to decrease the frequency of those acts, so you measure how often they occur. Then you watch to see if they occur less often after you change the relations between swearing and the events that follow it. The validity of the data is clear.

But the validity of your data is less clear if you're not directly measuring the frequency of the behavior you want to change as with problems like suicide attempts or stealing. Before you begin our treatment program, you can only guess that the behaviors you've picked to work with will change the behaviors you really care about. You hope the events you've chosen are related to suicide attempts and stealing; in other words, you hope they are valid to the extent that they are truly tied with or competing with the behaviors of attempting suicide and stealing.

- 8 Define reliability. Describe an instance of it.
- 9 What is interobserver reliability?
- 10 Define validity. Describe a behavior that you **can** be sure you're getting a valid measure on and another behavior you **can't** be sure you're getting a valid measure on.

EXTENDING BEHAVIOR CHANGE

The last point we'll discuss in this chapter concerns how far the changes you obtain extend into the life of the person whose behavior has changed. The point is this: in the real world, you don't simply want Prudence to refrain from swearing on the playground where you did your b-mod program. You did it there because that was where she swore most often and where it caused the most trouble. But your broader goal was to arrange things so Prudence's good acts will produce more rewards, fewer aversives and keep her mother from getting an ulcer. You must make sure her mother knows how to maintain the decrease in Prudence's swearing. You must also make sure that Prudence doesn't simply shift her place of swearing to the nursery school, the living room, the back seat of the car or her grandparents home!

But the behavior change won't "just happen." To extend the behavior change into these other settings, you must plan for it. Changes in any behavior are only as lasting as the behavioral procedures that maintain them. If you want to stop Prudence's swearing, you may arrange for other rewards to take over. The best way for other rewards to take over is to arrange for other behaviors to occur. Perhaps if you reward Prudence for saying, "Oh, darn" when someone beats her to the slide, you might not need to worry much about what she might have said instead. Also, you may want to instruct others in her world to always ignore her when she swears.

Only in the past 15 or 20 years have people begun to accept the concept of changing human acts by applying behavioral principles. At first we had to spend much time showing that human acts would change if their behavioral procedures changed. The next step proved

even harder: How could we be sure the new ways of behaving would last? It must be clear by now that no way of acting will last forever. People only keep on acting as they do because the world keeps on giving the cues and effects that maintain their acts. So Mom must always be careful to keep providing rewards for Prudence's using terms that aren't swear words.

Perhaps after a while Prudence will "just naturally" use other terms, since they've produced many rewards. But Mom shouldn't count on it, shouldn't stop listening, shouldn't stop providing rewards for better ways of talking.

■11 What do we mean by "extending behavior change"? Give an instance where the changed behavior is generalized.

CONCLUSIONS

In this chapter we discussed two things we must do before we begin a b-mod program to change behavior. We work out a consent form with our client, stating what acts we're to work with and the procedures we're to use, especially any aversive procedures. Then we gather baseline data on the behavior to be changed, recording these data on a graph.

We also discussed the kinds of measurement we might use, the best being an actual recording of the frequency of the behavior of interest. Sometimes, though, we can't get a direct measure of the act we're interested in, in which case we look for acts closely related to, or cues for, that act — or acts that might compete with it. But whatever we measure, we try to make sure our recordings are reliable and valid. And we also plan to extend any desired behavior change we get — because all too often such extension doesn't "just happen," so we end up back where we started.

Behavior modification is made up of powerful sets of procedures that can help people in ways no other techniques have been able to. But we must follow the rules in this chapter — getting informed consent, gathering baseline data, using charts and graphs, making sure our data are reliable and valid, and planning for generalization.

chapter 11
some basic techniques of modifying behavior:
sexist behavior

INTRODUCTION

Have you ever known people who kept messing up their lives or other people's lives or your own life? Have you ever wished you could help them change? Did you feel you didn't know what to do? Well, in this chapter you'll learn something about what to do — you'll learn about some techniques for helping such people change their behavior. You'll learn that you don't have to sit on the sidelines with your hands in your pockets as people make a mess of their lives and the lives of others. You can **deal with it**. You can help them turn their lives around. And you can use the same techniques to improve your own life.

In the last two chapters you saw that behavior modification was the planned use of the principles of behavior to change behavior. You also saw some of the basic features of a behavior-modification project:

getting informed consent, observing and recording the behavior, making sure that your observations are reliable and valid, and that the modified behavior generalizes from the initial setting to other settings of concern.

In these next few chapters, we'll look at some specific ways to change behavior using behavior modification. And in the present chapter we'll look at some very basic techniques we often combine with other techniques when changing behavior.

In fact, the first technique we'll cover is so basic you may be surprised we even call it a real behavior modification technique — yet it is also so basic that many behavior modifiers often overlook it; it is the technique of simply asking people to modify their own behavior — to change the way they act. We will also look at some basic techniques that may be less obvious — the techniques of self-recording, feedback, social rewards and behavior contracts. And we'll look at all of this in a case where a woman helped a male colleague get rid of some of his sexist behavior.

SEXISM: SPECIFYING THE PROBLEM BEHAVIORS

Marie: Jim, may I talk to you for a minute? Something's been bugging me a bit, and I thought it would help if I got it out in the open. Now I don't want to sound too aversive, but I'm a little concerned with the effect you're having on Sally. And I don't think you're the only one doing it — we may all be. But it looks to me like you may tend to treat Sally a little more like a servant than like the equal she really is.

Jim: What do you mean?

Marie: Well, you're always telling her what to do and asking her to get things for you — like you're her boss. But you're not. She's worked here as long as you, and she knows what needs to be done and how to do it just as well as you do.

Jim: But she doesn't mind.

Marie: I know. It's easy for all of us to fall into that old male-female role. But that doesn't make it right. She needs to have the chance

to pick up new skills, just like you and I. But if she stays in that old servant role, she'll never get anywhere. I think you can really help her if you stop giving cues for those sorts of acts, if instead you dish out some rewards when she's acting a little more on her own.

Jim: But still, she doesn't mind. So why should it bother you?

Marie: It bothers me because I don't think that's the way things should be. We're all locking her into the servant role with our social rewards when she does little chores for us and our slight aversives when she acts more independently. We're locking her into serving us with our smiles, our thank you's, our pat's on the back, our requests. We're locking her into that role just as surely as if we used a padlock and a key.

And we shouldn't cop out by saying she seems to like her role, since that's all she's ever known. If she had a chance to really get into a professional role, she might find that it produced even more rewards for her.

Jim: Yeah, she might find that, but she might not either. She might get fewer rewards as a professional. You don't know for sure.

Marie: Maybe. But there's something else too. I think we have to ask what each of us can give to society. I think we should all try to give as much as we can. But we should also help others give as much as they can too. We should work toward building a world where we all achieve our greatest potential. And Sally's not achieving her's when she's acting as the personal servant for anybody who's willing to use her that way.

Jim: Wow. You sure know how to make me feel guilty with all your flag-waving speeches. But I guess you're right. I'll try. I can't promise I'll succeed, but I'll try. I've got my own behavioral history you know. Playing my old role has produced a lot of rewards for me. So it won't be easy.

- 1 Why should you help people improve their position in life, even when they're not complaining about their current one?

Who, me? A sexist?

ANALYSIS OF VERBAL REQUESTS

That little scene forms the basis of this chapter. It shows that you, like Marie, can use verbal requests as a cue for new acts. And these simple requests often play a major role in helping you get those new acts to occur.

Tell people what acts you'd like to see, and convince them that the new acts will produce worthwhile results. Give the cues for acts that are likely to produce rewards, and make it clear that they'll get rewards and perhaps avoid aversives with these new acts.

And what are the rewards for the desired acts in this case? First of all, the approval of the person making the request — rarely stated, yet clearly there. And corny as this may seem, it sometimes even helps to state that the desired act will produce such approval. If Jim had been a little slow in picking up the message, Marie might have said, "Jim, I want you to know that I really appreciate the fact that you're trying to change your behavior. I appreciate the fact that you're trying to do the right thing. And I know it's hard. In fact, a lot of people wouldn't even try; they'd just deny that there was a problem rather than trying to deal with something so hard. So I really respect you for trying."

So you always imply approval when you ask people to change their behavior, but sometimes you need to make the fact that they can get it as a reward more clear-cut. By the same token, you may often imply disapproval if they fail to change their undesirable acts, yet sometimes you may need to clearly state that the person will get that aversive if he acts in an undesirable manner. For instance, Marie could say, "I'd hate to think you're so insensitive to women that you have to suppress and dominate every female that will let you."

But often more rewards and aversives are involved than those social ones coming from you — the person requesting a change: "It will be best for Sally and best for the office if she has a chance to learn new skills, rather than just going on as your servant." And it will help you to point out such things, because it's most often rewarding to do what's best for others and most often aversive to know you're not doing what's best for others.

- 2 In what way can a verbal request act as an effective cue? What is it a cue for?

Avoid a Foolish Behavior Mod Approach

While our little scene mainly shows how you can use verbal requests to get new acts to occur, it also brings up a couple of other points. The first is: **Avoid a foolish behavior mod approach.** You've got English, so use it; don't be coy.

Many people, beginners and pros alike, would try to change Jim's behavior by giving a social reward each time he allowed Sally a little freedom, never actually telling him what they wanted him to do. But that may be a slow way to change behavior if Jim doesn't give Sally much freedom to begin with, or if you're not around them that often. Many times you can change behavior much faster if you stop playing behavioral "Twenty Questions." Instead, you should use cues in the form of a verbal request. You should make use of the fact that you can both already speak English. Start with the simplest technique – the request, and bring out your heavy b-mod guns only if you have to.

- 3 What do the authors mean by "avoid a foolish b-mod approach"? Cite an instance and tell what they suggest you do instead?

Deal with It

The second point is that you should get in there and deal with life – **deal with it** – rather than sitting back letting the world program you with the rewards and aversives that just happen to come along. Too often we go through life huddled in a corner – afraid that any action on our part might cause us to lose the few rewards life has thus far happened to toss our way.

Marie might have asked, "What if he gets mad? What if he makes fun of me? What if he stops liking me? What if . . ." What if you don't do anything? Maybe the problem will go away. Maybe Sally will assert herself without any help. Maybe Jim will see the light before I have to deal with him. Sure – maybe. But maybe not? In fact, most

likely not, and you know it. Remember, the best way to predict future actions is to look at past actions, unless there is a change in the kinds of effects those behaviors produce. (Problem behaviors rarely improve of their own accord. They occur because of their behavioral effects — they'll keep occurring as long as they have the same effects.) So don't cop out on Sally, or the office, or Jim either, for that matter. Deal with the problem. **The best way to predict future acts is to look at past acts.** The best way to predict what Jim and Sally will do in the future is to look at what they're doing now — master-slave routine.

But one thing will change if you don't step in. As Jim and Sally keep conforming to the old-fashioned male-female roles, you'll find it more and more aversive. And as you find it more and more aversive, you'll start being cold to Jim. Then, over a few months, you'll get downright nasty with him. And finally, hurt and defensive, Jim will ask you if something's wrong. And you'll inform him that you certainly can't explain it if he's such a klutz that he doesn't know what's wrong. By that time you'll be right because you'd be too upset to begin any sort of effective behavior change procedure; you'd just end up clubbing him with aversives."

The standard approach is to let things ride — avoid the chance of a hassle. And the final result is that people keep acting the same way, a way that makes them harder and harder to bear. So instead: Move in on it. **Deal with it.** Don't let it get worse.

- 4 Why should you "deal with it" rather than waiting for it to get better?

SELF-RECORDING

But suppose Jim has trouble changing the way he acts. Suppose he can't overcome his sexist ways. What then? You may need to arrange for some **feedback**. In other words, each time he talks with Sally, Jim should note whether he acted in a correct or sexist manner. The best way for him to do this is to record how it seemed to go. He can use

a piece of paper or a response counter that he can wear around his wrist. (Jim can push a little button on the response counter which tallies each response. Such counters are often golf counters you can get in sporting goods stores; other wrist counters make use of beads that you move to tally responses. People have done self-recording with wrist counters to help them control all sorts of acts like swearing, making negative remarks, eating too many calories or junk foods and even thinking unhappy thoughts. Two counters would work well for this project — one for sexist talk and one for correct talk.) He should record the number of times he acts in a sexist manner and the number of times he acts in a nonsexist manner; he should then plot those numbers on a graph every day. Most likely, Jim will then see an increase in the times he acts correctly with Sally and a decrease in the times he acts in a sexist manner.

Why does self-recording work? Self-recording causes the acts Jim records to have more cue control over what he does. Once he starts to record his own actions, he becomes more aware of them — that is, he can say to himself that they are occurring. So the acts he's recording become cues for making some feedback statements, such as "Oh, oh. That looks a little sexist. I'd better cool it"; or "That wasn't a sexist statement — I'm improving!" And these self-given feedback statements may cause Jim to stop his sexist routine once it has started.

And those statements may also act as self-given rewards and aversives. But how can self-recording help him stop his sexist statements **before** he says them? Perhaps once he begins the recording procedure, the cues that once caused him to make a sexist comment may now become cues to control his nonsexist actions. For instance, Jim needs his pencil sharpened and Sally isn't doing anything except writing the annual budget request — in the past this would be a clear-cut cue for him to ask her to "be a sweetheart and do him a little favor." But now these same stimuli cue him to suppress what he used to take as his male birthright. There may also be other cues once he starts self-recording. Often before he speaks, Jim rehearses the words silently to himself. Thus he may stop his speech before he says it out loud.

- 5 Describe how someone might use self-recording to manage his or her own actions.

■ 6 Cite two ways in which self-recording might help someone re-
duce the rate of an undesirable act.

GETTING RELIABLE SELF-RECORDING

People often have a hard time making correct judgments about their
own actions. So Jim may need a little outside help before his nonsex-
ist and his sexist actions acquire precise cue control over his self-
recording. Most likely the problem will involve failing to record sexist
acts rather than classifying nonsexist acts as sexist. So Marie may
need to work with him on that. She can ask him to show her his graph.
Then they will need to talk it over, if she doesn't agree with what Jim
has recorded. Suppose Jim recorded only two cases of sexist acts for
yesterday, but she can recall at least six. She should point these out
to him, explaining, in a nonaversive way, why they fit into the class
of sexist acts.

For instance, "You and Tom and Sally were sitting at the work-
table, when you said, 'Hey, I've got a really good idea. Listen to this.'
And then you just talked to Tom, ignoring Sally as if your good idea
were too complex for her."

"Oh, come on now, you don't expect me to . . . Listen, Tom and
I have been talking about the problem for weeks. And Sally doesn't
care about those sorts of things."

"She may act like she doesn't care because you ignore her when
she shows the least bit of interest. Now I don't mean you haven't
gotten better. You've gotten a lot better. At least you've stopped
giving her aversives when she shows interest. You've stopped saying
things like, 'Sally, you don't have to worry your pretty little head
about those heavy problems.' "

"I did say that one time, didn't I? You have a vicious memory."

"Yeah, but you aren't coming on that way anymore. And I guess
I'm asking for you to go even further; go out of your way to involve
her in those high-level talks, even if she isn't taking the first step. Help
her overcome her history; you helped put her there."

"You ask a lot of a person," Jim said.

"Yes, I do; at least I ask a lot of people who I think can do it. And here's one more thing I'll ask of you. I think you're making too big a deal out of how well she makes the coffee. You're laying too many rewards on her for the housewife-around-the-office role."

"But you're always telling me I should give more social rewards to people."

"Yeah, but you want to be careful not to give so many rewards for only some types of acts."

"Hey, I never told her to make the coffee every morning."

"No, but we've all programmed her into that role with our praise. I know I do it too, and I'm trying to be careful."

"Should I stop the praise?"

"No, just don't make such a big deal out of it. And let's all take turns making the coffee from now on."

"You really do ask a lot of a person, don't you?"

"I wouldn't ask that from someone who was just average."

<p style="text-align:center">★   ★   ★</p>

But even that little exchange may not be enough to help Jim move in on his own actions with no further problems. Marie may have to give him a little feedback each day as to how well he's doing with his recording.

- 7 Why is it good to give feedback to people who are trying to change their behavior?
- 8 Cite an instance of how we might be responsible for programming someone into playing an undesirable role even though we never asked her to.

SOCIAL REWARDS

Marie may need to add a few social rewards on top of the other procedures we've discussed, just to help Jim along. Why? Because he's a social creature too. So a few social rewards will help him maintain his desirable actions. We can all use a little social support now and then.

"Jim, I sure do like the way you're getting into this behavior change project. You're really turning your act around. Even Sally's starting to get more and more like a professional, thanks to your efforts."

Jim may respond to his friend's praise in several ways. He may say, "Gee, that makes me feel real good. Thanks for noticing my efforts. And thanks for giving me a little support." (But Marie shouldn't be too let down if Jim fails to give her that sort of a rewarding response. Only the rare person will respond to such praise with a "thank you.") Or, he may act as if Marie had said nothing; but that's okay — a reward is a reward, whether or not the person getting it says thank you. Her reward will still make his nonsexist acts more likely, and it will also make him feel good. So she shouldn't let his silence fool her — Jim likes her praise, whether he knows it or not.

Jim may even start criticizing himself because he's not used to praise and so he hasn't learned how to handle it. "Oh, I don't think I've done anything. I just did what you told me to do. I should have done it without your having to tell me about it." And she shouldn't let his self-put-downs fool her either — he still likes her praise whether he knows it or not. She still hit the mark with her little social reward. Or, he might act suspicious — "Don't put me on with that phony social reward stuff. You don't really mean that; you're just trying to control me. I know you behavior modifiers."

We should distinguish between social approval as mere flattery and proper social approval in a reinforcement procedure. (We'll cover this more in a later chapter.) So Marie may have to help Jim see how they differ. "No, I'm only telling you what I feel. I really do like what you're doing. I really do think you're turning your behavior around. And I hope it's not just wishful thinking on my part, but I think Sally is starting to show some change. So it would be phony of me not to tell you how I feel, just because you might put me down. Besides, you've earned a little praise; that's the least I can do."

Despite all his talk, Jim still likes the praise — he wants to believe his friend isn't putting him on. So Marie is still on target with her praise. But what would she need to do if she wanted to be more certain that her praise was really acting as a reward for Jim? She would

need to wait and see if Jim maintained his improved performance or even got better in his work with Sally when she kept up her praise.

But often in day-to-day behavior-change projects you must use rewards you can be sure of without testing them out every time. And praise and approval are such rewards. A great deal of research has been done showing that social rewards are very useful in helping all sorts of people — normal children, retarded children, adults with behavior problems, teachers, hospital attendants and even behavior modifiers. But the mistake most new behavior modifiers make is holding back their use of social rewards because the other person has not learned how to accept praise and approval. So Marie may not only have to help Jim learn how to act in a nonsexist manner, she may even have to help him learn how to accept social rewards with grace.

- 9 What are at least three different ways people might act when you praise them.
- 10 What mistake do most new behavior modifiers make concerning social rewards?

BEHAVIOR CONTRACTS

Now maybe Jim and Marie have been going along like this for a few weeks and Jim hasn't gotten much better; he still needs to improve. Then Marie may need to use a stronger procedure — a **behavior contract** — a procedure that has helped all sorts of people improve their actions: children, husbands, wives, juvenile delinquents and college professors.

Marie: Jim, you're doing real well, but I think we could make even more progress if we used a behavior contract.

Jim: Oh, oh! What's that?

Marie: Just what it says really. A contract about behavior. We specify the desired behavior, we specify the rewards that will occur if the behavior occurs, and we also specify the aversives that will occur if the desired behavior doesn't occur.

Behavior contract: an agreement specifying 1) the acts a person should do and should not do, and 2) the added rewards or aversives those acts will provide.

Jim: And so you want me to — what did you say — treat Sally in a less sexist manner?

Marie: Yes, but we need to specify the desired behavior in more detail.

Jim: I should treat Sally 'more like an equal and less like a servant.'

Marie: Yes, but we need to give even more details, so we'll be sure to agree when you've fulfilled your contract. We need to say what acts involve treating Sally like an equal, and what acts involve treating her like a servant.

Jim: Do we really need to go through all this?

Marie: Well, you still have room to improve and this is one of the best methods for improving. And we really need to be sure we agree on all the details.

Jim: It seems a little picky, but I'll give it a try.

Marie: Good. So what do we call treating Sally as an equal?

Jim: Well . . . asking her the same sorts of questions I ask the guys — hard questions about our work. Telling her about some of my new ideas. Asking for her help on things where she'll need to use her professional skills. Praising her for starting projects on her own. And here's another one: not letting her cop out on fixing some of the equipment every time she giggles and asks if there's a man around who can help her.

Marie: Yes, I think you've got it, even on the last one — I'm afraid that's what you call treating her like an equal. Now what do we call treating her like an inferior and like a servant?

Jim: I suppose that when she asks a technical question, I shouldn't pat her on the shoulder and tell her not to worry about it. And I shouldn't ask her to do things for me that don't make use of her professional skills, like I shouldn't ask her to get me cups of coffee and sharpen my pencils for me.

Marie: I think you've got it. Now let's specify **how much** good behavior we can try for and **how much** bad behavior we might put up with — at this stage.

Jim: Okay, let's try this: I'll act in a nonsexist manner at least 10 times a day, and I'll never act in a sexist manner.

Marie: You're courageous. But most people blow it by trying to improve too fast; they fail to meet their goals and then they drop the contract because of their aversive failure. Instead of 10 good interactions, why don't you go for five per day? And instead of no bad interactions, why don't you try to hold it down to two per day? I think you can reach those goals. Then after that we can raise our standards.

Jim: Now what about those rewards and aversives?

Marie: You should get a reward if you get your nonsexist behavior above your five-per-day goal, and your bad, sexist behavior below your two-per-day goal. If not you should get an aversive.

Jim: So what will the reward and aversive be?

Marie: How's this — for a reward, I'll buy you a cup of coffee; for an aversive fine, you buy me a cup?

Jim: This whole thing seems a little silly. Do we really need to go through with it?

Marie: I think it will help you get control over your actions. I know you can afford to buy your coffee and mine too, but it's sort of like a bet. And the value of the reward and fine are mainly symbolic. They're just ways of stressing the fact that you won or lost; and I think you'll find they get you working pretty hard on bringing your behavior under control.

Jim: Okay, I'll give your behavior contract a try.

Even little contracts like that often help a great deal, as they make the goals much clearer. In turn, the clear goals cause Jim's actions to have much more cue control over future actions; those clear goals have especially good cue control when Jim gets close to the end of the day with only one good remark, or when he reaches his limit of two bad remarks by the morning coffee break. The added reward of the free cup of coffee also makes the contract more fun to continue.

Marie might add even stronger rewards and aversives if Jim keeps having trouble controlling his actions, at least if he's still willing to work on it, and if she has the power. For instance, he might get a five-

dollar bonus if he meets the contract, and he might pay a five-dollar fine if he fails to meet the contract. Heavy business, but sometimes you need to get a little heavy.

- ■11 Define behavior contract and cite an instance of one.
- ■12 What error do most people make in terms of setting their goals for improvement when they design their own behavior contracts?
- ■13 Cite an instance showing why a behavior contract can help a person by making their goals more clear-cut.

THE BIG SCENE

We haven't been talking about science fiction or never-never land. The problem is real and the solution healthy. Every setting is full of problems like Jim's, whether the setting is your job, your classroom or your family. It doesn't hurt to have such problems. But it does hurt to avoid dealing with them. Such problems can build up and really destroy a setting.

So solve those problems; deal with them. He leaves the office a mess and bums everyone out — so deal with it before the office and the people in it become a shambles. She takes over your classroom discussion with off-the-wall put-downs, never saying anything pleasant, bumming out the teacher and the students — so deal with it before she ruins the whole term. Some of the research people aren't plotting data on a daily basis like they should — so deal with it before such a backlog develops that they'll never catch up. One of the behavior mod staff is starting to miss meetings with people who are coming in for help — so deal with it, before people stop coming. Someone — your husband or wife, your brother or sister, your roommate — someone isn't doing his or her share of the chores — so deal with it before you blow your top.

And this isn't 1984-Brave-New-Worldsville either. Just because it doesn't seem natural doesn't mean it's wrong. Beer didn't seem natural the first time you tried it, either. Neither did spinach. And it seems like you shouldn't have to tell people when they're screwing

up. But the cold, hard truth is that you do have to. It seems like you shouldn't have to mess around with feedback, social rewards and behavior contracts, but you do have to. You have to if you want to put together a good scene. And, it won't help that much to leave the scene or get rid of the people who are in it; all scenes have those same problems. Sooner or later, you're either going to have to deal with it, or put up with it or become a hermit. So deal with it.

Deal with It Now

The reluctant may say we've only talked about one problem, but any setting has many, many problems, and we can't deal with them all. Perhaps not. But you can start. And you can start with the ones that bug everyone the most or with the ones that you may be able to take care of with the least effort. But do start. Do deal with it.

"But it all seems so artificial — so unnatural."

So what! Clothes, cars and central heating are all artificial, unnatural, yet you feel okay about them. And as you get into a behavioral-activist approach to life, you'll also feel okay about that. So deal with it. A whole setting becomes most effective when many people in that setting are behavioral activists. You build a behavioral culture in your setting, so that it gets to be second nature to approach both personal and work problems from a behavioral point of view. So that from a behavioral point of view you all do the right thing with as much comfort, ease and grace as you now show when you say "thank you" to someone for passing the salt at the dinner table. And you can do this in your office, in your classroom, in your home, anyplace.

Yet to build a total behavioral culture in a setting takes time. It may take one, two, three years or more. But you'll always be seeing progress in spite of many setbacks. There are not many behavioral settings of this sort, but they're starting to happen. And they're good to be in. It's also fun to build a behavioral community. But it's frustrating. And it takes time and hard work. So start today. But start with tact, because you'll need to convince most of the other community members. And **do it now!**

▪14 How can you answer the following objection: "You shouldn't
use behavior mod to deal with problems of your friends, rela-
tives, and colleagues because it doesn't seem like that's the nat-
ural way to get along with people and it seems too artificial."?
▪15 Why should you "deal with it"?

CONCLUSIONS

In this chapter, we've looked at some of the basic approaches we use
in getting new behavior to occur:

1. We saw that the first thing is to simply **ask** people to do what
    you think they should do. Let them know what the problem
    is, and suggest how they can make things better.
2. You can also use self-recording. It often helps people increase
    acts they would like to increase and decrease acts they would
    like to decrease.
3. You can give them **feedback** about their performance to help
    them improve their recording and to increase the amount of
    cue control for bringing about the right acts, while suppres-
    sing those you don't want to occur.
4. **Social rewards** will help the person improve his performance
    even when he isn't able to receive those rewards with grace.
5. Sometimes you need to add other rewards and fines with the
    use of a behavior contract.

But you should always **avoid a foolish approach** — avoid using
complex behavior mod techniques when a simpler method such as a
verbal request will work. The odds are the problem won't get any
better, until you **deal with it.** But the odds are you can really make it
better when you do deal with it.

chapter 12
prerequisite behaviors
and shaping

The Importance of Dealing with Prerequisite Behaviors

Conclusions

Enrichment
    Overview
    Natural Shaping
    Behavioral History
    Tricks for Becoming a Successful Behavior Modifier

INTRODUCTION

Nancy is five years old, but she cannot walk, and her doctor says she will never be able to walk. She has cerebral palsy (a paralysis due to a defect in part of her brain). Nancy cannot walk.[1] Nancy's doctor is right — Nancy will never be able to walk. Not if she always stays in the normal world — a world where most children don't have her problem — a world where most children can learn to walk with no trouble, except for a few tumbles here and there. Nancy will never be able to walk unless she gets into a special world — a world designed to help her learn to walk — a world more generous than the one that taught you and me how to walk — a world more patient — a world more helpful in her learning each of the skills she must have before she can later learn to walk. In this chapter, you will learn how to design such a world.

    In this chapter, you will learn how to help people like Nancy, help them do things they would never do without your efforts, without your help in designing a more generous, more patient world. You will learn how to use behavior analysis and behavior modification to help people learn the acts they need first, before they can learn more and more complex acts, before they can do the final acts they need. You will learn how to use behavior analysis to:

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[1] This is based on O'Neil, S. The application and methodological implications of behavior modification in nursing research. In M. Batey (Ed.), *Communicating nursing research: The many sources of nursing knowledge.* Boulder, CO: WICHE, 1972.

1. Analyze the task, so you can find all the acts the person must be able to do.
2. Analyze the person's behavioral history, so you can discover why she may not have learned those skills or acts.

And you will learn how to use behavior modification to:

1. Measure baseline, so you can discover what acts someone can do now.
2. Add extra rewards to support the learning of the new acts.
3. Design the details of a training procedure to move from the prerequisite acts to the final acts. (By prerequisite acts we mean prerequired acts — usually, simpler acts a person must be able to do before she can do more complex acts.)

HELPING A DISABLED CHILD LEARN TO WALK

Suppose you are a behavior modifier. Then what would you do if Nancy's parents came to you for help? You would design a special world for Nancy — one that could give extra rewards for acts that showed even the slightest progress toward walking. In this special world, Nancy would get rewards for her efforts — efforts that would not produce rewards in the normal world. The normal world may only reward the finished act — not progress toward that finished act. In the normal world, we get rewards for walking only when we manage to walk to some place that has those rewards, only when we walk from a less rewarding place to a more rewarding place. But in your special world, Nancy will get the rewards she needs in order to learn. And in the next sections you will learn how to design this special world.

- 1 In what way does the special world of behavior mod differ from the normal world in terms of the acts that get rewards?

BEHAVIOR ANALYSIS

First we do a behavior analysis of Nancy's problem.

Task Analysis

In this behavior analysis we will first do a **task analysis.** In a task analysis you ask what are the details of the task she must perform and, sometimes, what are some of the cues for performing those tasks?

Task analysis: a task analysis usually has two components: (a) find the basic acts that make up a complex set of actions; (b) find the proper cues for those basic acts.

So task analysis shows that Nancy must be able to:

1. Rise to her knees.
2. Get to her feet.
3. Walk with a crutch.

So, at least two acts must precede walking — at least two prerequisite behaviors. Note that these acts form a behavior chain — a stimulus-response chain where each response produces a stimulus condition that cues the next response in the series:

Response (rising to her knees) cues,
Response (getting to her feet) cues,
Response (walking with a crutch).

▪ 2 Define task analysis and give an example.

Behavioral History

As the second phase, our behavior analysis often involves looking at the person's behavioral history; you ask why hasn't Nancy learned to do these prerequired things — these prerequisite behaviors?

Well, at first she might not have been physically able to perform this complex behavior chain, not before she had surgery. And now she doesn't need to; she has another means of getting around; she scoots on the floor. So now she still won't walk, even though she might be physically able to. Why? Because she can get around by

scooting on the floor. But why does her scooting make it less likely she'll learn to walk? Because scooting produces stronger immediate rewards than does trying to rise to her knees — a prerequisite to walking. And so, of course, the act that produces the stronger immediate rewards wins out. Scooting wins.

- 3 Cite an instance showing how persons may have learned acts that will now prevent them from learning more effective acts.

BEHAVIOR MODIFICATION

After the behavior analysis, you should design and start a behavior mod program.

Assessing Baseline Performance

You always begin a behavior mod project by assessing or measuring the person's baseline performance — her performance before you try to help her. That way you can:

1. Find out what the problem is.
2. Find out how bad the problem is.
3. Be prepared to see whether your solution to the problem is working.

So in the first phase of this behavior mod program, you should find the prerequisite behaviors Nancy can actually do or perform. Nancy rises to her knees only 20% of the time when you ask her to (even though you praise her and let her play with a cupful of marbles whenever she does as you ask). And she never gets to her feet or walks holding on to a stationary object (a cabinet). So, Nancy does the most basic task now and then, but not the more advanced tasks. At least you have a place to start — raising herself to her knees.

- 4 What are three reasons for assessing baseline performance?

Adding Rewards

Next select a set of added rewards you will use in helping Nancy learn to walk. Of course you will use social praise, but you add a few more that might be even more powerful — like ice cream and the chance to play with the cup of marbles for a few minutes.

Shaping

Next start a shaping procedure for helping Nancy gradually learn each response she will need in the stimulus-response chain that ends in walking. Your shaping procedure for Nancy has several phases. You go to the next phase in the sequence only after she has mastered the ones that come before.

1. First, give Nancy a spoonful of ice cream every time she rises to her knees.
2. Next, give her a spoonful of ice cream only when she pulls herself up to her feet by holding on to the cabinet.
3. Then, give her ice cream only when she takes a few steps while holding on to the cabinet.
4. Then, use a harness consisting of a belt, two shoulder straps and a chest strap that you hold while also holding her left hand.
5. Then, loosen the straps of the harness a little bit at a time and remove them one by one as she learns to walk with less and less support. As she progresses say, "Good," whenever she walks with less weight on the remaining strap, and give her ice cream when she walks across the room.
6. Then, provide only your finger for Nancy to hold on to for support.
7. Next, allow her to hold on to a 12-inch stick while you walk beside her holding the other end. (Move to the next phase when she puts less weight on the stick.)
8. Then, fasten two wooden handles on a spring, giving one to Nancy to hold on to and keeping one yourself.

9. Then, give her a crutch and help her by picking it up and putting it down as she moves.
10. Then, gradually decrease the amount of help you give her until she walks with the crutch alone. When she reaches that stage, stand at one end of the room and give her approval, ice cream and a chance to play with the marbles when she walks to you without your help.
11. But an interesting problem develops. During the phases before you started with the crutch, Nancy had walked with her arm outstretched to support herself. And now she keeps doing that even though she is defeating the purpose of the crutch she holds with that arm. So fasten a 1-pound weight to the bottom of the crutch, making it hard for her to hold it out for very long.
12. So, in the final phase of your shaping procedure, help Nancy learn to walk without the weight on the crutch.

And, at last, you and Nancy achieve your goal: the little girl who would never be able to walk is now walking; she's using a crutch because she is not able to maintain her balance without one when she is standing still. And her gait is still spastic, but she is walking on her own. She is walking. And you did it using a very powerful behavior modification procedure — you did it using **shaping**.

Shaping: a procedure for producing a new response. First provide a reward following any response that is at all close to the new response, or provide a reward following a response that is part of the new response. Gradually provide rewards only for those acts that are closer and closer to the new response, until at last only that new response can produce a reward.

Note that there are two ways that you can shape up a new response: (a) you can start with a response that resembles the new response; and (b) you can start with a response that is part of the new response. For instance, the act of walking with a harness is similar to the act of walking without it. And the act of rising to her knees is part of the total act of getting up and walking.

■ 5 Define shaping.

Shifting Control to Natural Rewards

Of course, you want to get Nancy to the place where she will walk with her crutch even though you are no longer giving her food rewards. After all, no one stands around handing you ice cream every time you walk across the room. But, on the other hand, you do get some rewards whenever you walk across the room: you turn on the TV, you turn on a light, you get some ice cream from the freezer, you pick up a book, you look out the window, you put on a sweater — some reward maintains your walking, otherwise you wouldn't do it. So, as much as possible, you want to get Nancy to the point where the same sort of normal rewards will maintain her walking.

The first thing you can do is stop using the ice cream. Simply give her a little praise and approval, a little affection, whenever she walks with her crutch. And when you do this, you find that she walks 100% of the time.

In addition, you'll want to make sure Nancy gets plenty of normal rewards strong enough to maintain her walking, when you're not around. You want to make sure she doesn't get rewards for scooting, whether those rewards are social approval or other normal physical rewards.

And you may have to make sure that, once in a while, people give her social approval for walking, even after your formal training program is over. She may need this added reward of social approval even though you and I don't need it. Why? Because it's still much harder for her to walk with a crutch than it is for us to walk without a crutch. So don't be too surprised if people have to provide a little booster social reward now and then.

■ 6 Cite an instance showing how you would shift from added rewards of a behavior mod project to the built-in rewards of the normal world.

Size of the Project

And how long did this take you and Nancy? One week? Two weeks? No. One 30-minute session, four days per week for 60 weeks — a total of 240 sessions! The next time it might not take as long, but it may never be short. So it's no wonder that Nancy hadn't learned to walk. Her world wasn't arranged so that she could, and no one knew how to change that world in the right direction until you came along. You can imagine that it would be hard to keep up an effort like that for 60 weeks if you weren't fairly sure it would work out.

SHAPING WITH AND WITHOUT PHYSICAL AIDS

Notice that you used physical aids — an interesting feature of Nancy's shaping procedure. You started with the cabinet, moved to your hand and the harness, and finally used a special crutch before getting to the new response of walking with a more normal crutch. (You used physical aids to make the response more likely to occur or more easy.) But, of course, the entire shaping procedure often takes place without the use of physical aids. For instance, you used no physical aids in shaping standing.

And there are many other cases of shaping without the use of physical aids. One example involves shaping grooming and hygiene skills in institutionalized patients. Nurses have used this procedure to help those residents called "mentally ill" and "retarded" acquire the skills of washing themselves. First they give a resident a reward whenever the person makes any response that vaguely resembles grooming, and slowly they require more and more complex grooming before they give a reward. Eventually they get the residents to the point where they can wash themselves with little or no help from the nurses.

- ▪ 7 Cite one instance of shaping with physical aids and one for shaping without physical aids.

REVIEW OF SHAPING

The crucial features of using the shaping procedure involve analyzing the new response you want and looking at the responses the person can do at the present time. For instance, you wanted Nancy to be able to walk with a crutch and she was only able to scoot about rising to her knees once in a while. So, you may have to wait forever if you wait to give a reward only when that desired new response occurs — only when walking occurs — because that response might never occur. Nancy had never walked with a crutch in her entire five years.

So you had to select a series of acts that would gradually move from what she could currently do to what you wanted her to do. The series included getting to her knees, walking while holding on to the cabinet, etc. All part of the procedure of shaping. And this procedure — shaping — is one of the most powerful concepts we have in helping people acquire new acts — acts they would never perform without it. Yet many people, including professional therapists, give up on helping people because they don't know about shaping, because they think if the person can't learn the response in the normal world, that person can never learn the response. But, shaping breaks through the constraints of the traditional world to build new behavior.

▪ 8 What are the crucial features of shaping?

A CHILD WHO CAN'T READ

"Bobby, what instruments and means of locomotion are used in polo?"
    "Huh?"

★   ★   ★

    "Class, before you come to the blackboard, I want you to finish your artwork, unless you got an 'A' for last week, except those of you working on the 'America-Salutes-Tomorrow's-Youth-Today' poster."
    "Huh?"

*   *   *

"Now, Bobby, stay in your seat."

*   *   *

"Now, Bobby, stop putting Suzie's pigtail in the electric pencil sharpener."

*   *   *

"Now, Bobby, sit quietly, and pay attention. Look up at the blackboard and listen to me."

*   *   *

"I don't know why he never does what I ask him to. Just ornery, I guess."

BEHAVIOR ANALYSIS

Task Analysis

Remember that in a task analysis we usually do two things. We break complex tasks down into the basic acts they're made up of. And then we find out what the cues are for those acts. So now let's do a task analysis of the needed classroom behaviors — behaviors Bobby doesn't seem to perform.

What's the problem?

1. Bobby can't respond in the right way to many words — words like "instruments" and "means of locomotion." They don't exert good cue control over his actions. His vocabulary is too small.
2. He can't respond in the right way to complex sentences — sentences like "Before . . . do . . . unless . . . except . . ." They fail to exert cue control over Bobby's actions.
3. And he can't follow simple instructions — instructions like

"Bobby, stop . . ." They often fail to exert cue control over his actions.

And Bobby must respond the right way to all three types of cues to succeed in school. So this sort of cue control is a prerequisite to success in school.

■ 9 Describe three types of cues that are important prerequisites for success in school.

Behavioral History

But why don't the verbal cues control Bobby's actions at school? Because each of those cues is quite complex. And each requires the right kind of behavioral history to set them up, even though we adults take such verbal cue control for granted. Children can respond in the right way to those verbal cues at school only after the cues have come to have some control over their actions — usually before they go to school.

Bobby would be more likely to respond the right way to certain words at school if those words had already acquired cue control at home. He would be more likely to respond the right way to complex sentences if those sentence forms had already gotten cue control at home. And he would more likely follow instructions if instructions had gotten cue control at home.

But often children will not respond correctly to strange words, complex sentences, or instructions because those verbal stimuli have not acquired cue control at home — where they normally are first exposed to it. Why? Because the parents don't use such words and sentences. And because they either don't give instructions or don't pair their instructions with reinforcement or avoidance procedures, so the instructions don't become effective cues.

For instance, Bobby's dad might ask him to sit down and eat his meal, but then Dad might fail to do anything when Bobby doesn't go along with the request. In other words, the instructions don't become a cue for avoidance. Or, Bobby's mother might ask him to take

out the garbage, but then she might not follow his actions with so much as a thank you. In other words, the instructions don't become a cue for reinforcement.

In some homes, the parents do everything themselves for their children, rather than instructing the children to do some of those things. And in other homes, parents more or less ignore their children. This is often a feature of the behavioral histories of children called "culturally deprived."

- ■10 Why is it that complex verbal cues don't have proper control over the behavior of some children in grade school?
- ■11 Why haven't complex verbal cues acquired proper control over the behavior of such children in their homes?

BEHAVIOR MODIFICATION

Now that we've analyzed Bobby's behavior, it's time for action — it's time for a behavior modification program.

Interacting with Your Host

At first Mr. Johnson worried about having someone from BSU use his students as guinea pigs when Mae Robinson was invited in to do a behavior modification project in his classroom. He'd had all of "that sort of thing" he needed. The BSU students came in, disturbed his class, got their data for some strange study and then left. And his students never got any good out of it.

Mae answered his concern. "Yes, but most behavior mod projects aren't like that. I want to help you and your kids. Not rip you off. The purpose of behavior mod is to help people lead better lives, to help students learn, to help teachers do a better job teaching, to help them have more pleasant classrooms to work in.

"So if you have any problems you're not able to handle, I'd like to work with them."

"I'm not having any problems in my classroom. There's nothing I can't handle here. I don't need any outside help."

"No, no. I'm sorry. I didn't mean it that way. But you've certainly more than got your hands full; you've got 30 kids in your room. I'd be happy to help you with them if any have fallen behind."

"Well, you might see what you can do with Bobby. He is having trouble learning to read. And I haven't had the time to give him the help he needs."

"Thanks, Mr. Johnson, I really appreciate the chance to work with your class. I'm sure I'll learn as much as Bobby does."

"Well, I like helping out you college kids from BSU whenever I can."

★   ★   ★

You must be careful not to offend the people you are trying to help, and you must also be careful not to offend their helpers. And Mae almost blew it. When you enter a new setting, you must be careful to avoid being aversive. And if you suggest that the people in that setting are having any problems doing their jobs well, then you are being aversive. In fact, your very presence as a behavior modifier in that setting may imply that you're looking for problems and that you have every reason to believe that you'll find them.

Almost everyone will get defensive when you enter their lives in that manner. If you have time, and if it's possible, the best way to start in a new setting is simply to come in as a visitor saying that you want to observe what's going on so that you can learn something about the procedures used in such settings. And, you should spend a few days simply observing, staying out of the way as much as you can, and taking few notes. But, every time you leave, you should give one or two social rewards to your hosts for the good job they're doing.

Then, after you've set yourself up as a source of social rewards, you might say something like this, "Gee, it sure seems to be a lot of work to run this class with all these kids. I don't know how you manage to do it all. Is there anything I might do to help." But you

have to be a little careful here or you'll end up cleaning erasers and washing the blackboard. So, "I would really enjoy working with Bobby because he seems to need a little more help than most of the rest of the kids, and you sure don't have time to pay individual attention to each student."

Learning how to avoid being an aversive stimulus for your hosts may be one of the most important things you could learn as a behavior modifier. Why? Because often you will work as a guest in a setting where the staff might find your presence threatening and aversive. And the staff may not invite you back unless they find you rewarding and not aversive. In fact, whether you will be invited back often depends **mainly** on whether they find you rewarding or aversive — being invited back may depend very little on how good a job you did in helping your client.

■12 What may happen if you offend the people you are trying to help?

PREACADEMIC BEHAVIORS

Assessing Baseline Performance

First Mae Robinson assessed or measured Bobby's baseline performance, sitting quietly in the back of the room, she recorded the frequency of various types of appropriate and inappropriate behaviors on Bobby's part, noting the situations in which they occurred. And, of course, she soon saw that he hadn't learned the prerequisite skills Mr. Johnson had taken for granted — he didn't stay in his seat. He was always wandering around, talking to one of the other students, getting a drink of water or staring out the window.

And this lack of prerequisite skills was also easy to see when Mae measured Bobby's baseline performance in another setting — at a small table with two chairs, which Mr. Johnson had set up in the back of the room where Mae and Bobby could work without disturbing the rest of the class. Even when Mae was working with him, Bobby

would get out of his seat and wander around the table. And even in his seat, the work materials and Mae's instructions didn't have much cue control over his looking at the cards. So she decided to deal directly with those prerequisite skills or behaviors, in order to bring them about under the correct cue control. For it looked like Bobby would get no place otherwise.

Adding Rewards

So she directly attempted to make those prerequired acts more likely to occur by following them with rewards whenever they occurred. "You're a good boy for staying in your chair Bobby. Here's a raisin. I'll give you a raisin every time you sit in your chair for two whole minutes without getting up."

Shaping

Getting Bobby to sit in his chair was, in itself, a shaping procedure, for Bobby rarely sat in his chair very long. At first he stayed in his chair for only two-minute periods, but she slowly increased the amount of time required to get a reward, until at last he was staying in his chair for the entire twenty-minute session. A world's record for Bobby. And when he had trouble paying attention Mae would reward him each time he simply looked at the materials she held up. "That's good Bobby, you looked at the letter, so here's a raisin."

■13 Describe a behavior mod procedure for getting a child to stay in his or her seat.

ACADEMIC BEHAVIOR

Assessing Baseline Performance

Next, Mae measured Bobby's baseline performance of academic behaviors. She gave him the reading book the others used, but he made

no headway with it. He could describe the pictures, but the words themselves exerted no cue control at all. Next, Mae pointed to single letters, but with no more success. So that's where she'd start — with the alphabet.

Adding Rewards

Clearly Bobby didn't find much reward in simply being able to name the letters of the alphabet. So the raisins were a welcome aid in setting up that cue control. Mae even used those rewards when she was shaping the responses of reading words and sentences. The act of reading "My cat is fat" doesn't have as much built-in reward as we might hope (at least not for Bobby). (For a reward, Mae had planned to use M & M's — behavior mod's old standby — but her friend, Sid, accused her of addicting poor Bobby to the sugar and caffeine in the evil candy. So she switched to fruit. She used half raisins, so that she could give more rewards each day before Bobby got filled up and the raisins lost their rewarding value.)

Often such added rewards are helpful or even crucial in shaping new acts that will not get rewards often enough until they have become well learned. For instance, behavior modifiers often use added rewards in shaping school-related acts of young children, acts like reading, writing and arithmetic. Other common forms of added rewards used in shaping new acts are social approval and praise. But often approval and praise seem so natural that we don't realize we're using added rewards — yet we are. And much data show that praise can be a very strong reward in shaping appropriate behavior or new skills. For instance, in teaching a child to read, the parent or teacher might point to letters of the alphabet and then give the reward of a smile and praise when the child names the letter.

But Mae picked the raisins as the added reward to use first, because she felt she needed as strong a reward as she could get and she thought that (for Bobby) the raisins might be stronger than her praise.

■14 Why is it often helpful to use added rewards in shaping new acts?

Shaping

Mae made up a set of 3 x 5 cards with a letter of the alphabet on each one. First she would hold up the card, say the letter and then ask Bobby to tell her what the letter was. After a while, she simply held up the card, asking him what the letter was with no hint from her. And each time Bobby made the correct response, he got a half a raisin as a reward. As you might guess, learning the alphabet progressed much faster after Bobby had learned to stay in his seat and look at the alphabet cards when Mae asked him to.

This is an example of a behavior chain, where a series of responses must occur to produce the final reward — the reward that maintains the whole chain. First, Bobby must sit down, then he must look at the card, then he must listen to Mae and finally he must say the correct letter before he gets a reward — the raisin. And each of the earlier responses in the chain is more or less needed because he can't make the later ones without them.

This training procedure is a shaping procedure also, since Mae is providing rewards following responses that are part of the new response. In other words, she's shaping a behavior chain, and we may think of an entire behavior chain as one, big response.

■15 Review: What is a behavior chain?
■16 Describe a behavior chain a child might need to perform when learning to read in a behavior mod project.

OBJECTIONS TO ADDED REWARDS

At one point, the school principal walked in. "What's that young lady doing in the back of the room? Is she feeding that child?"

"Ah, not exactly, Ms. Priz. She's using raisins as a reward. She's trying to help Bobby learn to read."

"Well, she can't do that in my school."

"Why not, Ms. Priz?"

"The other children will object."

"No, I was worried about that too, but the tutor assured me that the other children won't object. All we have to do is explain to them that Bobby needs special help, that he needs the raisins so he can learn to read. She says they often do that sort of thing with no problem. And sure enough, she was right. The students didn't complain."

"I also object to her using any kind of rewards like those raisins for another reason too."

"Why, Ms. Priz?"

"Because adding rewards for reading seems too artificial, too unnatural. Those raisins will detract from the real value of reading."

"I know what you mean. But Mae said that scientists haven't been able to clearly show that. They haven't been able to show that using added rewards decreased the power of the built-in rewards. But they have clearly shown the value of adding extra rewards when we're having trouble teaching new skills."

"Well that may be. But I object to these raisins — to these added rewards — for an even more basic reason. You're bribing that little boy, that's what you're doing. You're bribing him."

"We talked about that one too. And she said it didn't seem like bribery to her. She said bribery is when you use rewards to get people to do things that they shouldn't do — not when you use rewards to help people do things that they should do."

"Maybe. But I just don't like the idea of giving people rewards for doing things they should do anyway — things they should do without those rewards. Reading should be its own reward, and we shouldn't have to give anyone raisins for learning to read."

"I know how you feel, but because of Bobby's behavioral history he's going to need some extra rewards, at least for a while; so we can teach him how to read. It might not seem right to use added rewards, like raisins, but I'm afraid Bobby's just not going to learn to read if we don't. So I . . ."

"I don't want to hear anymore about it, Mr. Johnson. No raisins!"

Later Mr. Johnson approached Mae. "I'm sorry, but that's the way it's got to be. I guess that means the end of your helping Bobby, because I know behavior mod needs rewards in order to work."

"No problem, Mr. Johnson. There are more to rewards than meet

the eye, or the taste buds. Ms. Priz didn't say I couldn't tell Bobby I liked what he's doing, did she?"

"No, of course not."

"Well, by this time that may be all the reward Bobby needs. But I might add one more reward if that's okay. Suppose I promise to play with Bobby for a few minutes after school, on each day that he gets 20 flash cards right. The principal wouldn't object to that either, would she? People don't seem to mind it so much when we use activities and social approval as rewards. It's just when we use objects — things like toys and raisins."

Sure enough. Ms. Priz saw nothing wrong with either helping the student with warm approval, or with a warm, loving playground relationship. She felt that wasn't bribery.

And once Bobby learns to read, most likely he won't need the added rewards because the normal rewards for reading will take over then. Bobby will have access to interesting reading material — a normal reward. And after he's read the instructions telling how to do things, he'll be able to do them — a normal reward. And the rate of reward will also be higher; if he has to struggle with every word, it may take some added rewards to keep him going, but once he's reading with ease, the normal rewards may occur at a high enough rate to keep him reading.

■17 What are four objections many people have to using added rewards when doing behavior mod? And what are answers to those objections?

■18 Why don't children need added rewards once they learn to read?

THE IMPORTANCE OF DEALING WITH PREREQUISITE BEHAVIORS

But children often need many prerequisite behaviors and much prerequisite cue control before they learn more complex acts that come under the control of the more complex stimuli children encounter in

grade school. If the children can't make the right responses to the right cues, then they will do poorly in school.

And that is a major problem in education. Teachers often assume children can do things they can't do. So those teachers aren't able to deal with the problems children have in trying to learn more complex skills — problems due to the lack of behaviors that make up the first stages in learning those skills, just as Nancy's standing up was the first stage in learning to walk.

■19 Teachers often fail to deal with a student's lack of prerequisite skills. Describe how this can cause a problem for the student.

CONCLUSIONS

People often fail to deal effectively with the problem of lack of prerequisite behaviors, because they don't have the prerequisite behaviors themselves:

1. The behavior of doing a behavioral analysis of the problem.
2. The behavior of doing a behavior modification project to solve the problem.

The behavior analysis consists of:

1. Noting the prerequisite behaviors and the prerequisite behavior chains.
2. Noting the lack of rewards, etc., to cause those prerequisite acts and chains to occur.

Some of the tools of behavior modification are:

1. Assessing the level of the prerequisite behavior.
2. Using added rewards.
3. Shaping: a) with physical aids; and b) without physical aids.

You can often help people make major changes in the quality of their lives by looking for a lack of prerequisite behaviors when dealing with problems and by using a behavior modification approach to

help the person acquire the prerequisite and final behaviors. So, we should start where the behavior is. We should find out where the behavior is and then start there, rather than starting where we think the behavior should be. You can help people greatly improve their lives if you follow this and other rules of shaping. Otherwise, you may meet nothing but failure and heartache.

ENRICHMENT

Overview

As human creatures, most of us have inherited biological structures so that we can acquire all of the basic skills we will need to survive, even in this rough world we grew up in. Why? Because this rough world of ours is more or less the same one our ancestors evolved in, the same world our bodies and social customs evolved in.

But some people have impaired bodies, either inherited or due to injury. And others may happen to have been in a world that does not make effective use of the normal cultural practices that have also evolved. And most of us have some problems due to our world changing faster than our culture or biology. Revolution vs. evolution. Thus, many people are not able to deal with their world − not able to cope. Why? Because they don't have adequate behaviors. And often they are not able to learn those adequate behaviors in their current world because they don't have the needed prerequisite behaviors. Yet the normal world often insists on the finished product before it will give up any of its cherished rewards. Nancy needs to be able to stand up before she can learn to walk. Bobby needs to be able to sit down and attend to his tasks, before he can learn to read.

Most people see the need for those skills before learning more advanced skills. As a result people without the basic prerequisite skills may be called genetically, or congenitally, or naturally incapable of performing or learning the new response − as with Nancy. And equally often, if they are not pronounced genetically deficient, they are pronounced deficient in character (or morals). They are labeled as

being so lazy they'll never amount to anything, never learn to read and write, or whatever.

In order to acquire many of the acts most of us take for granted, such people often need to live in a special world for a time, a world that will go out of its way to make desirable acts more likely, helping those people learn new responses — a world ready to produce rewards for responses that are even slightly like the goal, the new response.

Natural Shaping

Shaping often occurs as a result of a planned behavior mod procedure, but sometimes it may occur in an unplanned manner. For instance, you watch Johnny Carson tell a joke that produces a chorus of rewarding laughs and moans from the audience and shouts from Big Ed and the boys in the band. So the next day you tell the same joke to your friends. As you near the punch line you eagerly prepare for the laughter and praise you're sure will follow. But what really happens?

If your normal skills are such crude approximations that you can't imitate Johnny's unique delivery — his pauses, his dismayed, little-boy look, hands in pockets, head turned first to Ed and then to Doc — then your joke may produce nothing and perhaps even a few mild aversives. Then your behavior will drop out or extinguish before the natural effects have a chance to shape it.

But if you happen to do a close enough mimic of Johnny's multi-million dollar delivery, so that you get a few 50-cent laughs, your behavior may keep on. And once in a while your timing may be such that you even blunder into a $1 laugh. That extra rewarding laugh will make your improved delivery more likely, to the point where you'll usually hit the $1 mark. You may even stumble into the $5 range now and then, until you're hitting it at that range with amazing frequency, due to the shaping effects. And one day, there you are; you've made it! You're filling in for the man himself while he does a week in Vegas.

Behavioral History

Often, we can start a behavior mod project without doing an analysis of the behavioral history behind a particular problem. However, we still find it of value to do such an historical analysis. Why can we usually start a behavior mod project without analyzing the behavioral history of the problem behavior? Because we'll be dealing with the current factors controlling the problem behavior — the cues that precede the behavior and the effects that follow that behavior. Besides, the factors currently causing that behavior problem are sometimes not the ones that started the problem in the first place. For instance, physical limitations may have prevented Nancy from walking, initially. But, after her surgery, those physical limitations were no longer so severe. So instead the reinforcement procedures in her normal environment may have continued to prevent her from walking, after her surgery.

On the other hand, it does sometimes help us to do an analysis of the behavioral history of a problem before starting our behavior mod project. Why? For several reasons:

1. Because it may help us find those factors (cues, rewards and aversives) currently controlling the behavior if we know the factors responsible for the behavior problem developing in the first place. The factors currently controlling the behavior problem are often (though not always) the same as those that started it in the first place.

2. In addition, in the future we may be able to design environments that prevent such problems from developing, if our analysis of the behavioral history of such problems indicates the potentially relevant factors.

3. Furthermore, such speculative analyses of behavioral history may also suggest the factors responsible for causing behavior problems. Then we can do experimental work that will establish causal relations between the factors that we think are responsible and the behavior problem.

4. It is intellectually rewarding to be able to interpret and ex-

plain the factors responsible for behavior problems by doing analyses of the behavioral history, even though that explanation may only be tentative speculation.

5. And finally, we may be more compassionate in our dealings with people and their behavior problems if we know the behavioral histories of their problems — we may be less likely to suggest that the people should be punished because of their shortcomings — we may be more willing to use a behavioral approach to help people, rather than simply condemning them.

Tricks for Becoming a Successful Behavior Modifier[2]

This chapter stresses the use of edibles as rewards. But how would you determine what edibles to use, how much to use or when the person will have eaten his or her fill? Reinforcement sampling by placing up to 12 different edibles in a muffin tin has been used successfully. Small edibles, or larger ones broken up, help to prevent satiation on any one particular edible. Allowing the child to choose the reward from trial to trial also helps to prevent satiation.

For older children and retarded adults, it is usually considered more appropriate to use social rewards, such as personal interactions, instead of using food. Also use age-appropriate activities as added rewards. You should always set specific mastery criteria and allow adequate time for the activity when setting up these programs.

When looking at attention as a reward, you should note that many children would just as likely work for negative attention (such as seeing their tutor upset), as they would for approval; this may be especially true of children labeled as having behavior problems. The remedy is to use extinction consistently for inappropriate acts and positive attention for good behavior, possibly pairing this attention with other added rewards.

Other methods you might consider are: allowing the child to be the tutor (in a programmed sense, of course); having him take the data or otherwise record progress — graphing or charting it publicly.

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[2] Written by Sandy Farrell.

When possible, facilitate generalization by involving other people in the reinforcement procedure, especially those close to the child.

Finally, here is a point worth noting if you plan on going into settings that are not your own: the success of any of the above techniques is related to how well you deal with the staff and those in positions of power. Without getting them involved in your programs you'll never get to use b-mod to help children.

chapter 13

the analysis and modification of abnormal behavior:

schizophrenic behavior

INTRODUCTION

How do people in mental institutions differ from you and me? They differ in the way they act. They act in ways that we'd call "crazy" — "bizarre" — "too strange" — so strange we find them aversive and perhaps they do too. And we end up calling many of these bizarre-acting people "schizophrenic." In this chapter we'll look at some of the strange things such people do. And we'll try to understand their actions, in terms of behavior analysis. We'll do this to improve our general skills of behavior analysis, to improve our skills at analyzing abnormal behavior, and to gain some insights into the behavioral processes that might cause people to act in such bizarre ways — ways that get them labeled schizophrenic and stashed away in mental institutions.

We will:

1. Present a brief review of behavior analysis.
2. Discuss some crucial factors in the cause and maintenance of acts called schizophrenic — factors that behavior analysis might indicate.
3. Analyze several acts in terms of those crucial factors.
4. Show some approaches that this analysis implies for reducing the amount of such bizarre acts.

A REVIEW OF BEHAVIOR ANALYSIS

First, let's review the five points that seem crucial to the analysis of complex, human, psychological phenomena, including schizophrenic acts:

1. We can view all psychological events as behavior, things people do. This position comes from the philosophical view called "radical behaviorism." Thus, we can look at all of the following human activities or events as behavior:
   a. Behavior includes actions of our skeletal muscles, such as those involved in walking or talking, either talking out loud or talking privately to ourselves, as may occur when we think.
   b. Behavior includes actions of our smooth muscles, such as those involved in gastro-intestinal tract and blood vessel activity.
   c. Behavior includes neural responses, such as the firing of single neurons.
   d. Behavior even includes acts of imaging ("having images"), such as those involved in making responses of seeing, hearing, smelling and feeling in the absence of outside stimuli.
2. The Law of Effect. This law states: the effects of our behavior determine, or influence, whether we repeat that behavior. Now, the effects of our behavior involve two major types of

events, "rewards" and "aversives." Rewards include things that support life, things like food and fluid. And aversives include things that cause tissue damage, like extreme temperatures, wetness and abrasive contacts. So, we tend to repeat acts that produce rewards (reinforcement effects). We also tend to repeat acts that escape or avoid aversives (reinforcement and avoidance effects). And we tend to stop acts that produce aversives (punishment effects). We also tend to stop doing acts that reduce our rewards (punishment effects). For instance, we'll be less likely to run from our office to our car if we slipped on the ice the last time (punishment procedure with an aversive event). And we will be more likely to ask our husband or wife to bring us breakfast in bed if he or she followed our request the last time (reinforcement procedures with a reward).

3. Learned social rewards and aversives determine much of the behavior of socialized human beings. These learned rewards and aversives acquire their power through pairings with other rewards and aversives. Learned social rewards may include smiles, nods, approval, agreement and, sometimes, simply attention. And learned social aversives may include frowns, negative headshakes, disapproval and disagreement. So, we will be more likely to run sliding across the ice to our car if several passers-by smiled and applauded our daring the last time (learned social rewards with a reinforcement procedure). And we will be less likely to ask our husband or wife to bring us breakfast in bed if he or she applied a few disapproving labels to us the last time (punishment procedure with learned social aversives).

Now, approval and attention may be such strong rewards for most of us because we must have the approval, or at least the attention, of people to get many of our other rewards. For instance, children need the attention of their parents to get many of their most basic rewards. And adults still need the attention of salespersons, teachers, students, etc., to get many of their rewards. But often the social rewards and aver-

sives that influence our actions are more subtle, much more difficult to pinpoint. They might involve only a tone of voice, a question, a slight change of facial expression, events we may not be aware of, yet events that exert great control over what we do — over our actions. And people often make the error of believing that their acts are independent of such rewards and aversives, simply because those rewards and aversives are too subtle for them to consciously detect.

4. In most cases, only the immediate effects of our behavior directly influence whether we repeat that behavior. This is the "Principle of Immediacy." For instance, we keep on overeating, since the eating response produces a small, but immediate, reward. We overeat, even though those responses have also produced a gain in excess weight in the past, a large (no pun intended), but delayed aversive. And we keep putting off doing things that produce small but immediate aversives. We procrastinate, even though such acts have put us in a much greater, but delayed, aversive state of affairs, in the past. So the Principle of Immediacy helps us understand many cases where people seem to act against their own, long-range, best interests.

5. We might add a fifth point, the Law of Stimulus Control: the effects of rewards and aversives tend to be restricted to settings similar to those in which they have occurred. So an act may become more frequent in one setting, because that act produces rewards for that setting, while it will not become more frequent in another setting since it has not produced rewards there. The suppressive effects of aversives are restricted in the same manner. Thus, we may tell dirty jokes at a party where such acts produce rewarding laughs and no aversive frowns. But we might not do so in church where those jokes would have the opposite effects.

■ 1 What are the five points that seem crucial to the analysis of complex, human, psychological phenomena, including schizophrenic acts?

REASONS FOR SCHIZOPHRENIC ACTS

Now that we've reviewed some of the most basic concepts of behavior analysis, let's look at six of the behavioral processes that may underlie acts called schizophrenic:

1. The actual acts we call schizophrenic are often the same sorts of acts we call normal.
2. Furthermore, the rewards that maintain those acts are often the same for schizophrenic acts and for normal acts, whether those rewards are unlearned or learned.
3. We label those acts schizophrenic because they occur too often or in the wrong settings.
4. Often schizophrenic acts may occur because the particular environment programs them with the social reward of attention.
5. Schizophrenic acts may occur because normal punishment procedures are not operating to suppress them.
6. Schizophrenic acts may occur because they are not being replaced by normal competing acts that would prevent them from occurring.

- 2 What are the six behavioral processes that may underlie acts called schizophrenic?

The Failure of Disapproval

Now, let's discuss two questions about the basis of the analysis in the previous section. One concerns the lack of effective aversive control and the other concerns the lack of competing acts. First, the question of aversive control.

It's not that aversives fail to suppress schizophrenic acts; we needn't assume that. No. The problem comes from a specific aversive — a learned, social aversive — namely, disapproval. But why should disapproval be an aversive in the first place? Before we can answer that, we must recall why approval itself is a reward. And, as we saw, approval is a reward because it is so often paired with other rewards;

we must have approval of other people in order to get many of our rewards. And disapproval is aversive, because it has been paired with an aversive, and that aversive is related to the times when other people are less likely to give us those rewards. But why don't bizarre acts produce aversive disapproval for people classed as schizophrenic? Perhaps for one or two reasons:

1. The disapproval simply may not occur — people may just say, "Isn't it too bad about those poor schizophrenics; they can't take care of themselves?"
2. The disapproval may occur, but it may no longer cue the absence of rewards.

The rewards will keep coming in spite of the disapproval. At the most basic level, people called schizophrenic may keep on getting food, water and shelter in spite of the disapproval of those around them. So, the disapproval loses its power as a learned aversive, since it's no longer paired with the loss of rewards.

- 3 What are two reasons why disapproval may not control "schizophrenic" behavior in the same way it controls the behaviors of "normal" persons?

The Failure of Competing Acts

And now, let's look at a second issue — why people we call schizophrenic perform so few normal acts — normal acts that can compete with their bizarre acts. One of the factors involved may be the poor use of the aversiveness of social disapproval, as we've just discussed. And here's why. In asking why do we do many normal acts, we often fail to look at a crucial factor — a factor that maintains those normal acts — namely aversive control. Many of our normal acts produce mild rewards that are too weak to maintain those acts alone. But those normal acts help the person avoid social aversives, and that avoidance also helps maintain those normal acts. So mild social rewards combine with the avoidance of aversives to maintain many normal acts: acts like getting out of bed in the morning, dressing,

grooming, keeping neat, talking to people, listening to people, going to school, working, even perhaps acts like watching certain programs on TV and especially reading the newspaper. All of those acts may, to some extent, be maintained by their allowing us to avoid aversives.

Often people called schizophrenic can do those normal acts, and those acts would produce their normal rewards, and those normal rewards would be as rewarding as ever. So why don't they perform normal acts? Because other people often fail to make effective use of aversive disapproval when they deal with those they've labeled "schizophrenic." And, therefore, people so labeled no longer need to avoid disapproval by doing many normal things. But failure to behave in a normal way may no longer produce aversive disapproval for these people. And, therefore, many of their normal acts do not occur often enough to compete with bizarre acts. And so the bizarre acts win out, since their weak rewards are not as weak as the rewards for many normal acts.

(Note that the failure of aversive control has two bad effects. First, bizarre acts often occur because they are not being suppressed by the punishment process. And second, normal acts do not occur because they are not needed to avoid aversives. So we have a failure of punishment in the one case and a failure of avoidance in the other.)

But there is another reason why normal acts may not occur: often people called schizophrenic have simply never learned many of those normal acts in the first place. Also, there may be few rewards for normal acts for chronic, back ward hospital residents.

- 4 Why do bizarre acts come to dominate the behavior of some people, even when they are able to act in a more normal way?

ANALYSIS OF SCHIZOPHRENIC ACTS

Now we'll use this analysis to look at some acts people often call schizophrenic — the acts of extreme swearing, repeating nonsense phrases, self-stimulation, public urination and public masturbation — acts you'll often see in the back wards of mental hospitals.
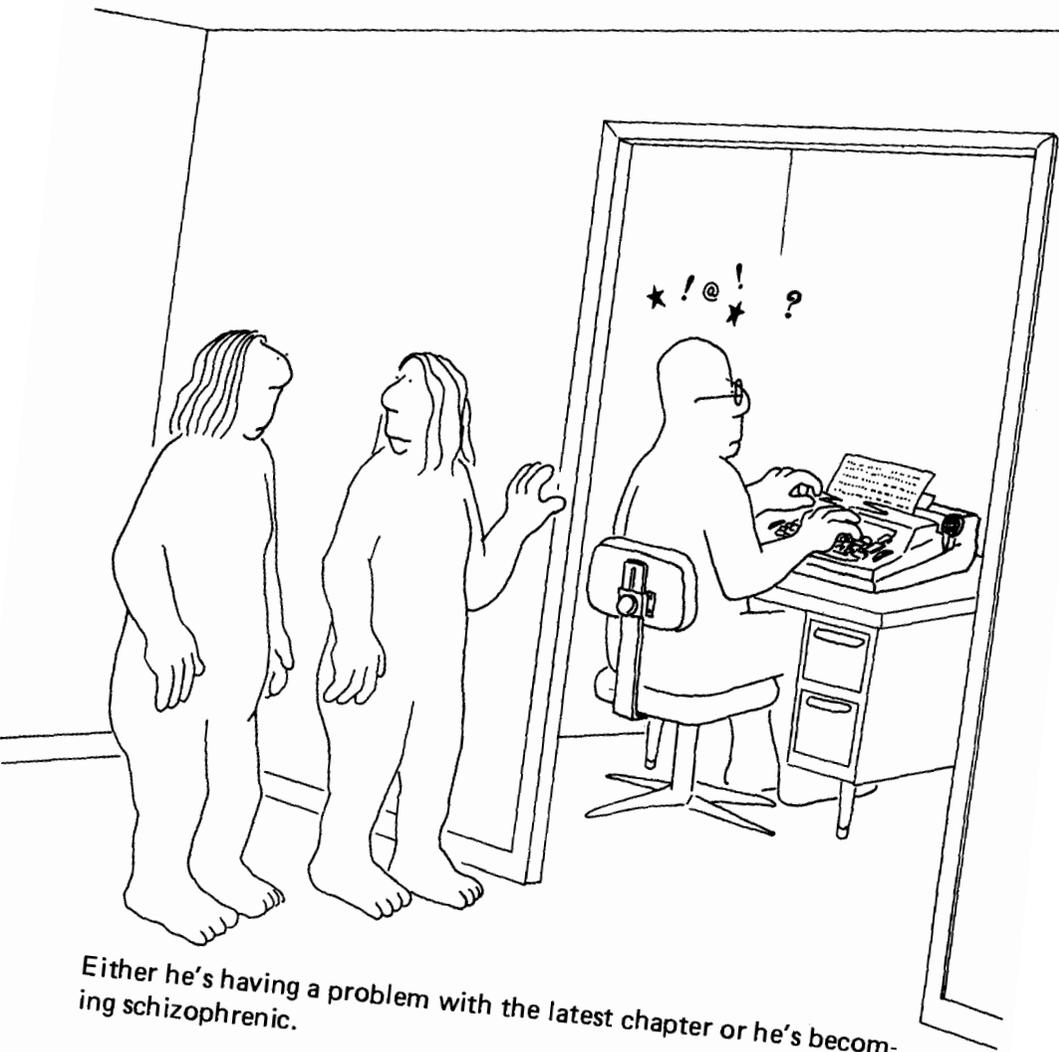
Either he's having a problem with the latest chapter or he's becoming schizophrenic.

Extreme Swearing

As I was writing this chapter, I stopped at the end of a sentence, paused for a few seconds, and then started swearing — out loud — several times in a row. "Blank a blank! Blank a blank! Blank a blank!" Very vile. Very naughty words. I paused for a few more seconds and then started writing again. Let's look at that act in terms of the six main points of this analysis:

1. Swearing is fairly common, both as a normal act and as a bizarre act. But had people witnessed this little episode, they might have thought I was odd to utter an obscene phrase in the absence of any clear-cut cause, especially in that strange, repetitive manner. But they wouldn't have been too surprised to hear me swear that way if I'd been living in a state hospital — just a little schizophrenic episode, of course.

2. And what about the rewards for this swearing? To understand those rewards, we might look a bit more closely at the details of the act — the private details. When I stopped at the end of the sentence, I thought of a talk I had given. I thought of a joke I had made, a joke the audience didn't get, so that it seemed to be in very poor taste. That social error was an aversive experience. And thinking about it later was an aversive thought — an aversive stimulus. And aversive stimuli make us more likely to act in an aggressive manner. Why? Agressive acts become rewarding right after we've contacted an aversive stimulus. So an aversive thought makes us more likely to swear, because that aggressive act of swearing is now more rewarding. And so that aversive thought about my social error made it rewarding for me to swear — out loud — several times in a row. People we call schizophrenic find these aggression-based rewards for swearing just as rewarding as anyone else does.

3. I swore in the privacy of my office — not in public. So people would not classify me as schizophrenic.

4. This instance of swearing didn't produce any social rewards,

since no one was there. However, I have sometimes been known to use profanity in surprising settings because the shock value produces such rewarding attention — a sin many of my colleagues must share with me — a sin so common we discussed it as the Terry Southern syndrome in chapter 4. And this sort of rewarding attention can also control the swearing· of people we label schizophrenic. And people in hospitals can easily get attention (perhaps rewarding attention) by saying or even shouting obscene words — in fact, this may be one of their most effective techniques for getting that sweet reward of attention.

5. But, in my case, the presence of others most often suppresses that sort of obscene outburst. And why is that? Because their presence functions as a cue that a punishment procedure is in effect; in other words, such swearing would produce an aversive — a glance of disapproval or even a negative comment or two. However, in the case of people called schizophrenic, such a punishment procedure is often absent.

6. My act of swearing also shows the role of normal competing activities in replacing bizarre acts. When I was in the middle of typing a sentence, the cues had strong control of my act of typing. But when I reached the end of the sentence, the cues from the task had much weaker control. At that time, for a few moments, I had to think about what I would type next. And the cues of the task seemed to exert much less control over my thinking than they did over my typing. So, when I had stopped typing a sentence, other cues caused me to think about that talk, which in turn caused me to swear. But then my very act of swearing cued me to think that I was off-task, which in turn cued me to start thinking about this chapter, so here I am typing again.

But what about the people we call schizophrenic? Especially those in mental hospitals? Rarely are their tasks as rewarding as writing chapters about schizophrenic acts. And rarely are their tasks under as compelling a deadline as this one. So, the cues for being on-

task are much weaker for them, and therefore, such people are likely to spend more time in off-task thinking — with one possible side effect being that some of those off-task thoughts may be aversive enough to cause the person to swear out loud.

- **5** Analyze extreme swearing in terms of the above six behavioral processes that may underlie acts called schizophrenic.

Repeating Nonsense Phrases

I sometimes repeat little phrases, sometimes rhyming (the most rewarding kind, perhaps), sometimes from TV commercials, sometimes obscene things I've been clever enough to devise myself — single phrases, repeating many times, often occurring in the shower, but not always. Had people witnessed any of those little acts, they might have thought I was odd. But they wouldn't have been too surprised if I'd been living in a state institution. Just another little schizophrenic episode, of course. Let's look at this act in terms of the six main points of our analysis:

1. Again, repeating nonsense phrases is fairly common. Little children repeat such phrases all the time, and even moreso if the phrases rhyme. And I'm not alone in my shower-room shouts.
2. The simple sound of our voice may itself be the main unlearned reward, whether we label the speech normal or schizophrenic. And that audio reward is at its greatest in the shower, where the acoustical properties give that feedback a deep, rich, resonance that few can resist. Some people are even so strange as to actually sing and whistle in the shower.
3. But most often I suppress such vocal acts in the presence of others, unlike some of the people we call schizophrenic. And even when I'm alone, my sound making occurs less often when I'm out of the shower-room reverb chamber.
4. The social reward of attention can also serve to increase the frequency of this sound making, even though the first cause

was the unlearned reward of the audio feedback. So, like swearing, sound making can be a good way to get rewarding attention.

5. An effective punishment procedure may **not** be working to suppress the public vocalizing of people labeled schizophrenic.

6. What about competing activities? Well, besides its acoustic value, and its privacy, another feature of the shower also increases the likelihood of such bizarre acts: we often have little else to do with our verbal behavior at that time — we're not talking to someone, we're not reading, we're not writing. We are simply washing, an act that doesn't compete with sound making as it doesn't make use of the same muscles. So, we can get a few rewards with this sound making, while we scrub.

Of course, sometimes we're thinking quietly (talking to ourselves). And that thinking may be more rewarding than making rich, resonant, vocal sounds. But at other times, our thinking may not be too rewarding, and then the cues for making vocal sounds and getting rich, resonant audio feedback may be strong enough to get us to make those sounds.

I don't want to overstress the role of the shower in causing us to make vocal sounds. I've actually heard some people whistling and singing outside the shower, and, from time to time, I also emit my own weird vocal garbage outside the shower. And strange things do happen in elevators and automobiles also — but again, most often when no one else is around.

And what about the people we call schizophrenic? The reward value of their thoughts may often be quite a bit less than ours. Why? Because the life of the chronic, mental-hospital resident may not produce many cues to evoke many rewarding acts of thinking. So the result may be that the rewards produced by the vocal feedback are then strong enough to maintain quite a bit of vocal sound making compared to the act of normal thinking.

- 6 Analyze repeated nonsense phrases in terms of the six behavioral processes.

Self-Stimulation

There we sit, tapping our fingers, tapping our feet, stroking our beards, rocking back and forth, feeling the fabric of the sofa arms, even staring at objects. And what can we say about such acts in terms of our six main points?

1. Of course, we all engage in such acts of self-stimulation whether people call us schizophrenic or normal.
2. And the rewards are the same for all of us, much like the unlearned sensory rewards of audio feedback from vocalizing. All sorts of sensory stimuli seem to be mild rewards. And those rewards are certainly as immediate as you can get.
3. But, of course, we don't spend as much of our time in such acts as many chronic, hospital residents do.
4. Those acts may produce some small amount of rewarding attention, but, most likely, nowhere near the extent that swearing and other vocalizations do.
5. Again, for people labeled schizophrenic, no effective punishment procedure seems to suppress spending a large amount of time in carrying out such acts.
6. The lack of competing acts may be the main reason self-stimulation occurs to such a large extent among chronic residents of institutions. It's not that the sensory rewards from self-stimulation are so great, but, instead, such people just don't have many other acts they are likely to do at that time. We do the same things in the same places, where we have no competing acts — places like a waiting room, after we've sat there for an hour.

- 7 Analyze self-stimulation in terms of the six behavioral processes.

Public Toileting

What about going to the bathroom in public?

1. The same basic acts we also perform.

2. With the same basic causes — escape from aversive, internal pressure. Perhaps also some other sensory rewards.
3. But we call these acts schizophrenic when they occur in public.
4. And attention — a potential reward — will certainly result.
5. Such acts occur in public because current aversive control doesn't suppress them. It would be more effective at the moment for all of us to defecate and urinate whenever and wherever the occasion arose, but the disapproval from others prevents this act of expedience.
6. The lack of competing activities may not be crucial here.

- 8 Analyze public toileting in terms of the six behavioral processes.

Public Masturbation

Public masturbation may be under much the same control as defecation and urination.

1. It is an act common both to people labeled normal and schizophrenic.
2. The unlearned sexual rewards are the same. And, often, those rewards may also be like the sensory rewards for other forms of self-stimulation.
3. People say masturbation is a schizophrenic act when it occurs at the wrong times and places.
4. Public masturbation certainly produces attention — a potential reward.
5. Because it's an act labeled as schizophrenic, a punishment procedure may not be suppressing it.
6. But the lack of competing acts may play a larger role. Perhaps the amount of masturbation decreases when people have the chance to engage in competing acts, either because those competing acts produce stronger rewards or avoid aversives.

Now we've looked at a few schizophrenic acts to see how well we can understand them in terms of the concepts of behavior analysis. Next we'll see how this analysis might help us deal with such acts.

■ 9 Analyze public masturbation in terms of the six behavioral processes.

BEHAVIOR MODIFICATION:
REDUCING SCHIZOPHRENIC ACTS

What does our theoretical analysis imply about the design of programs to reduce these bizarre acts? Well, we've been looking at three main causes of those acts — their rewards, the lack of aversives and the lack of competing acts. Now we'll look at each of those factors in terms of what they imply about reducing the bizarre acts. First, let's look at the rewards for such acts.

Some rewards seem to be unlearned, biological rewards — rewards like auditory, visual and sexual stimulation — rewards other people can't control too well. But the reward of attention comes from interaction with other people, so we may be better able to control that reward. And, in general, we recommend ignoring bizarre behaviors, whenever possible. Those bizarre acts will occur even more often if they produce the rewarding attention of approval in addition to the unlearned rewards they also produce. So, as a first procedure, we can decrease the rate of bizarre acts by withholding any learned, social rewards they have been producing.

And, as a second method, we can use a punishment procedure. We can arrange for the bizarre acts to produce aversives — a natural procedure that may account for a good deal of the suppression of our bizarre behavior. And the most common aversive is learned, social disapproval. But to suppress bizarre acts, we must use social disapproval that is fairly aversive — aversive enough to outweigh the rewarding effects of the attention that must also be involved. As a first attempt we can simply disapprove — we can say, "Don't do that. That's bad." This disapproval may reduce the bizarre acts, if such statements still retain their aversive strength.

If that disapproval doesn't suppress the bizarre acts, then we must make disapproval into a stronger learned aversive. We can do this by pairing it with other aversives. The most natural method would be to

pair that disapproval with the loss of rewards — an aversive state of affairs. And the power of such a procedure may be increased by describing to the person what your procedure is. "Don't do that. That's bad. And because you did something bad, you will lose _____, or you will not get _____." There are many rewards we can remove: the chance to talk to others or eat as soon as the others do, the chance to have chewing gum or candy or sleep in facilities that are better than average. We can remove many rewards as a back-up, or strengthen the aversive properties of our social disapproval (of course, staying within the legal and ethical guidelines).

And now let's look at one final factor that might increase bizarre behavior — the lack of normal, competing acts. Here, our task is to increase the rate of those normal acts — acts that will compete with the bizarre acts and thereby decrease the latter. We can do this by having some normal acts produce extra rewards — rewards that are stronger than those produced by the bizarre acts. In that way we can increase the rate of these more normal acts until they displace the bizarre acts, because the person simply doesn't have time to do both.

That is a procedure for increasing public or overt acts, but our analysis also implies that we might try to increase the amount of time the person engages in normal, private or covert verbal acts (normal thinking) — acts that also compete with the bizarre acts. This may happen as a direct or as an indirect result of our programs of reward.

The daily lives of many people may be rewarding enough that the normal thoughts they cue are also rewarding. But the lives of many chronic, hospital residents may be so bleak and bland that the thoughts they cue are not very rewarding. So, for such people, bizarre thoughts may be more rewarding.

Again, those same sorts of bizarre thoughts might be just as rewarding for other people, but those people also have more normal thoughts — thoughts that will produce even greater rewards than the bizarre ones — thoughts that the chronic resident doesn't have — and therefore, those normal thoughts tend to prevail for people with normal activities to cue them.

But we might also look at a more direct approach to increasing the amount of normal, covert talk (or thinking). Of course, the prob-

lem is that the thinking is covert, so we can't deal with it directly. But we could use some indirect approaches that might increase the amount of normal thinking. We might start by noting that many of us seem to be social thinkers — much of our thinking is in the form of imagined talks with people we know. This may point to a crucial role overt, public conversation can play in controlling our covert self-talk — our thoughts. We might increase the amount of normal conversations the client has by rewarding such normal acts. In turn, this might increase the amount of normal, imagined conversations the person has in two ways:

1. The person might covertly repeat a rewarding conversation if such talk itself acquired a learned reward value. And that talk could acquire such reward value after enough pairing with the rewards that usually maintain conversation and especially after pairings with any special rewards we can arrange.

    Simply hearing what we ourselves have to say, seems to be a major reward for much of our conversation; so people might find that their own normal conversations have built-in rewards in that sense, whether the conversation is real or imagined.
2. A person might, privately or covertly, rehearse a future conversation, since such talk could produce imagined social rewards — rewards somewhat like those that help to support normal conversation.

A second method involves having someone wear a wrist counter and record every incident of bizarre, covert talk, perhaps moving into a strongly competing activity, whenever such an act occurred. But the disruptive effect of simply recording acts sometimes reduces them. Why? Perhaps because the act of recording also seems to make people more aware of such bizarre acts; perhaps it allows them to detect the act. And then they can stop the bizarre act at its onset or at least just as it starts to occur, but before it actually occurs.

■10 What are the three main causes of bizarre acts?
■11 How can we deal with those three main causes in reducing bizarre acts?

TABLE 13.1

Features of the Behavioral Process: The Relation between Schizophrenic Acts and
Similar Normal Acts in Terms of the Six Basic Features of the Underlying Behavioral Processes

Schizophrenic Act	1 Acts	2 Built-in Rewards	3 Setting	4 Rewarding Attention	5 Punishment	6 Competing Acts
Extreme Swearing	same	same	different	often same	often absent	often weaker
Repeated Nonsense Phrases	same	same	different	perhaps more	often absent	often weaker
Self-Stimulation	same	same	somewhat the same, but the occasion arises more often	perhaps more	none	often weaker
Public Toileting	same	same	different	more	often less	often weaker
Public Masturbation	same	same	different	more	often less	often weaker

CONCLUSIONS

In conclusion, we've looked at a few very simple and basic principles from behavior analysis. And we've tried to see how we could use these simple principles to understand some bizarre behavioral events — instances of those acts often performed by people called schizophrenic. These are summarized in Table 13.1. And we've tried to demonstrate an analysis that can help us go a long way toward understanding such acts, understanding those acts without assuming that people labeled schizophrenic differ in any basic way from other people.

Finally, we'd suggest that we must use those basic, behavioral principles if we are to understand those bizarre acts called schizophrenic, if we are to understand what triggered those acts, what keeps them going, and how we can get rid of them.

chapter 14
behavioral history and task analysis:
poor social skills

INTRODUCTION

We have seen how we can use a behavioral history and task analysis to help us understand and deal with some fairly basic skills — the problem of Nancy, the child who was not able to walk, for example. In this chapter we'll see how we can use a behavioral history and task analysis to help us understand more complex actions — the skilled social acts involved when one person talks with another.

We must get along with other people if we're to lead lives that reward and satisfy. Why? Because other people give us so many of our rewards. And yet many of us don't have the skilled social acts we need to interact well with those other people. So we can't increase the amount of rewards, and we can't decrease the aversives that both we and they get.

In this chapter, we'll look at extreme cases of people who can't perform skilled social acts — we'll look at the lack of skilled, social acts shown by many residents of mental institutions. And most of what we'll have to say about the causes of their problems also applies to our own less severe problems of poor social behavior.

BEHAVIORAL HISTORY:
SOME CAUSES OF POOR SOCIAL SKILLS
OF RESIDENTS IN MENTAL INSTITUTIONS

Harper sat at the desk in front of his class. "Now the first thing I want to deal with today is the notion of behavioral histories. We've used the concept quite a bit so far, but now let's go into a more detailed analysis of the kind of behavioral history that might produce some very unusual behavior. This should give us a clearer picture of how we can analyze people's behavioral histories so we can get a better understanding of what might be causing their current behavior problems. So we'll look at a very extreme behavior problem and then see if we can figure out what causes such behavior problems."

Behavioral History

"Many residents of mental institutions act in a withdrawn manner," Dr. Harper continued. "They don't talk much with other people, either other patients, the hospital staff or friends and family who come to visit. And when they do talk, they do a poor job of it; they don't look at the person, they don't smile, they don't say much. A common problem."

Dr. Harper paused. Dawn raised her hand, "Why do they act that way?"

Chet answered, "They're crazy, that's why."

Harper winced and replied, trying to ignore Chet's remark, "Well, as behavior analysts, we look at their social behavior as learned acts under the control of cues and behavioral effects, just like any other learned acts. So we suspect that the same factors that prevent other learned acts from occurring would also cause this lack of social acts in residents of mental institutions."

"And what might those causes be, Sid?"

"Well, first of all," Sid said, puffing thoughtfully on his unlit pipe, "first of all, a learned action might not occur if the person had simply never learned it in the first place."

Harper interrupted, "Good point, Sid. Many of the chronic (long-

term) residents of mental institutions may never have learned good social acts in the first place, though the acute (short-term) residents may have had a fairly good set of social skills at one time.

"But what if they have learned the social acts, and yet they aren't using them now?"

Sid answered, "Then there might be several causes. Perhaps the person's social interactions might produce punishment effects?"

Harper interrupted again, "That could be, but I suspect it's not too common. It's a little hard to see how a person's world could change in such a strange way that good social acts would stop producing rewards and start producing aversives — at least to so great an extent that the social acts would stay suppressed."

This time Sid didn't wait for Harper to pause. "Yeah, well, what suppressed the social acts first might not be the same thing that kept them suppressed. Maybe the punishment effect suppressed the person's social acts in the beginning. Like they might have run into one or two bad news people, people who put them down whenever they opened their mouths. And then, later, those new, nonsocial acts were kept going by their reinforcement effects. In other words, people who were trying to help the person might have ended up paying more attention when she was not acting socially than when she was talking, looking them in the eye, smiling, etc. You've said that sort of thing happens all the time, where the problem actions become more likely because people give rewarding attention when the problem occurs."

Juke added, "Yeah, I can just hear 'em now. 'Oh, poor Ms. Jones, what's the matter? You're sitting there like nobody loves you. But we all love you, Ms. Jones.' And so the best way for Jonsey to get all that good lovin' is to just sit there looking glum. Far out."

Sid, again, "So, at first punishment effects might suppress the social acts, and then reinforcement effects might have come along to keep the nonsocial behavior happening."

Harper summed up their progress to date. "So far we've seen two reasons why a person might not exhibit good social skills: first, the person might not have ever learned the proper ways of acting. And, second, the person may have learned them, but someone else may

have suppressed those acts initially with punishment effects, and then other people may have kept the nonsocial acts going with reinforcement effects."

Then Mae got the floor, "We've still got a third factor that stops learned behavior — namely extinction. Suppose people have learned good social skills, but later find they're in a world that no longer provides rewards for those acts. Then the behavior would extinguish. And the whole of the mental institution might keep up that extinction, because so many of the other residents no longer respond in a rewarding way. And, also, the institutional staff end up giving more rewards for acting in nonsocial ways than for behaving properly."

"That's a good point," Harper said. "And I think it may be fairly easy to extinguish the social actions of many of these residents, because those acts may never have occurred at a very high rate to begin with."

It was Sid's turn again. "And here's another factor. Sometimes the person may not be motivated enough. Maybe the rewards of the social interactions are the same as always, but those rewards aren't as strong as they once were. Like food might not work too well as a reward right after a big meal. And food might not work as a reward right after a person has seen a bad car accident.

"Now maybe some major catastrophe occurs in someone's life, something much worse than seeing a bad car accident. And then for a while after that, social approval and attention might not be so rewarding, just like food may no longer be rewarding after you've seen a bad accident. Approval and attention might not maintain the person's actions any longer. So the person stops doing those social acts, since their social results are no longer rewarding.

"Now here comes the tricky part. The person is now acting in a nonsocial way, and that's a cue for friends and family to start paying extra attention when the person sits there staring off into space. We've said that at first attention doesn't have much effect on the person, since it's not very rewarding. But after a while, as the impact of the catastrophe begins to wear off, all of that attention starts acting as a stronger and stronger social reward again. And what are the friends attending to? To the antisocial behavior, of course. So all of a

sudden they're caught in a trap where their attention makes the non-social behavior even more likely. And the friends and family shape up and maintain that nonsocial kind of moody behavior with their misplaced attention."

"Here's one more factor that might cause poor social skills," Mae added. "Many of our social acts are avoidance responses. They're maintained by the social aversives we get if we fail to act in the proper social manner. For instance, when I go down home to visit my folks, I have a hard time talking with them. So I just sit there staring out the window until they start bugging me about whether something's bugging me, and how come I came all the way home if I'm not going to talk to them. Then I smile and start talking so I can avoid their bothering me even more. And it seems pretty clear to me that a lot of my time I'm sociable because it helps me avoid social aversives. But a lot of our social acts would stop if those learned social aversives lost their control. And they would lose their control if other aversives never backed them up."

"True," Harper agreed, "but when would that ever happen? When would other aversives stop backing up the learned social aversives?"

"Well," Mae answered, "it might happen like this. Suppose the person keeps running into one catastrophe after another. Then, he might keep on acting in nonsocial ways. But suppose the people around that person keep reacting to him in an aversive manner, suppose they keep asking him what his problem is and why all the staring off into space. But suppose no one ever follows up those social aversives with any stronger aversives. Suppose the person still gets plenty of food, and care and no kicks in the pants? Then, those learned social aversives might lose their aversiveness. If you keep presenting a learned aversive stimulus like that without any back-up aversives, that's what happens."

Dawn raised her hand slowly, as she formed her question, "That makes sense to me. But if your theory is right, then why doesn't everyone end up in a mental institution after they've had some intense tragedy."

The class and even Harper were silent for a few moments, but at last Mae started talking. "I guess many people do end up in trouble

after they've had an intense tragedy, but, of course, many people don't. I suspect it's a tricky process to shape and maintain nonsocial behavior. I'm sure it helps if the person hasn't had a long history of strong behavioral effects that supported proper social behavior. Also, other things have to be just right. The rewards must be frequent and heavy for simply sitting around, doing nothing. And the rewards must be infrequent and light for starting the social behavior again. So nonsocial behavior would keep going only when those conditions balance each other in the right, precise, way."

Then Harper summed it up again. "So at least five factors may prevent a person from using social acts they've already learned:

1. The social acts might stop because of punishment procedures.
2. The social acts may remain at a low rate because competing nonsocial acts produce rewards.
3. The social acts might stop because of extinction.
4. The social acts might stop because their rewards are no longer effective.
5. The social acts might stop because the aversives they've avoided are no longer effective.

"Now let me sum it up another way. We've suggested a few possible causes for the lack of social skills of many mental institution residents:

1. The person simply may not have learned the proper social actions in the first place.
2. The person may have learned those social actions, but then they may have stopped occurring because of:
   a. Punishment procedures.
   b. Extinction.
   c. The rewards those results produce are no longer rewarding.
3. After the social acts stopped occurring, they stayed at a low rate from then on because:
   a. Extinction was still in effect.
   b. Social rewards were directly making nonsocial roles more likely.

    c. The learned social aversives had lost their power and no longer maintained their avoidance by good social acts."

- 1 What are three factors that would cause people to stop using proper social actions once they've learned them? Cite an instance of each factor.
- 2 What are three factors that would keep social acts at a low rate once they stopped occurring? Cite an instance of each factor.

Task Analysis

"We've looked at behavioral histories that might produce the extreme lack of social skills we see in many residents of mental institutions," Harper said. "And so the next step is to do a task analysis. And how do we do a task analysis? Well, first we find the basic acts that make up a complex set of actions, and then we find the proper cues for those basic acts. We need to look at normal social interactions as tasks, and then analyze the acts involved in performing those tasks. For instance, you should look the person in the eye. Don't fidget. Smile. Say something that makes the person feel good. Once he begins to respond, don't interrupt. Be polite. Maintain eye contact. Lean forward at the right time, but don't get too close. You can begin social interaction with a commonplace comment, such as an observation about the weather. Or you can begin a social interaction with a question. Those are some of the details we might come up with in a task analysis of good social acts."

    "But all of that seems so simpleminded, everyone knows about things like that," Chet said, "and doing them just seems natural. We shouldn't have to go into all those details."

    "Yes," replied Harper, "most of us take all of those details for granted. But if we're designing a specific program to teach those skills, we may need to break our task down into each component so we can, in fact, teach each of them. That way we can provide cues for each of the behaviors and make sure that each of the proper acts produces rewards, and that each of the improper acts doesn't produce rewards, and perhaps even produces corrective feedback.

"But we may need to do more than just describe the acts when we do a task analysis. We may also need to look at the cues for the acts — the settings in which those acts may occur," Harper went on. "For instance, here are four of the times when a resident would need to deal with other people in an institution:

1. When someone else starts talking to the resident.
2. When the resident starts talking to someone else.
3. When the resident starts talking with a group of people.
4. When the resident starts talking with people outside the institution, like friends and relatives.

"So all of this is an instance of task analysis — a task analysis of socially skilled acts." Then Harper went to the blackboard and wrote the following: task analysis.

Task Analysis

Turning to the class he said, "So, we've seen some of the basic components of the complex set of actions, called 'good social interactions.' Let's list them here. Mae, do you want to start?"

"Well," she began, "things like smiling, being polite, keeping eye contact going, things like that."

"That's right," Harper replied, "that's one part of the task analysis, and the other part is finding the cues for those acts. What are some of the cues, or settings, where those acts should occur?"

"Well, you mentioned a few like when the resident starts talking to a single resident or a group of residents, or people from outside. I guess all of those are different occasions that may need to be set up as cues for the reinforcement procedure for proper social interactions."

"You've got it," Harper said. "The basic components of a task analysis — finding the cues and finding the acts."

- 3 Do a brief task analysis of proper social interactions for residents of an institution.

THE TASK ANALYSIS AS A REVOLUTIONARY PROCEDURE IN HELPING PEOPLE WITH BEHAVIORAL PROBLEMS

Task analyses of the sort that we've just discussed should impress us a great deal, though their simplicity may initially put us off. But, in fact, the task analysis gives us a strong basis for behavior mod projects. The task analysis gives us a detailed breakdown of what behaviors and cues are required so we can deal with a person's behavioral weaknesses and excesses. But the humble task analysis might impress you more after a brief history of more traditional approaches to behavioral or psychological problems.

For instance, people used to say inner demons caused behavior problems. And the solution consisted of torturing "possessed" bodies with cold water, or fire in an effort to make the location of those persons' bodies so aversive that the demons would escape, leaving them normal again. Then the mental health professions (psychiatry and psychology) got involved. They said that people with behavior problems were suffering from diseases such as schizophrenia. And again they tried and still try to treat the whole disease, not each component of the problem. They often used therapies that seem much like the demon exorcism of previous centuries even though they may affect behavior — therapies that inflict the patient's body with strong aversives — therapies like electro-convulsive shock (high-voltage, electric shock across the brain that causes the patient to go into an extreme convulsion and pass out), and prefrontal lobotomies (sometimes involving the insertion of a tool through the eyeball socket to cut up the sections of the frontal lobe of the cerebral cortex of the patient's brain).

In contracting, when using a task analysis based on a behavioral approach, we look at each feature of the person's actions. Then we select a set of procedures to help them. And we may find that all of a person's behavioral problems are due to one central cause — perhaps a parent who only attends to a child when the child disrupts the peace and quiet. Then we would only need to deal with that single cause. But more often we find that each component of these problems has its own separate cause, so then we deal with causes, one by one.

When asked to describe the behavior of someone classified as schizophrenic, most people would simply say "the person acts crazy." Yet such a general description won't help us build or rebuild detailed sets of normal acts that person needs. And only within the last few years have we started looking at behavior problems in enough detail to begin shaping these complex patterns of action.

Some people think social acts themselves are a general set of skills you either have or you don't have — just as some people think schizophrenia is a disease you either have or don't have. But, for two reasons, it doesn't seem to be that sort of simple all-or-nothing problem:

1. The problem isn't consistent across all settings. We can't be sure a person will make the correct response in one setting just because he or she has made the correct response in another setting. Often the behavior doesn't generalize that much from one situation to another. In other words, we can't be sure that a resident will respond properly to a group of residents just because that person responds properly to a single resident. It's not an all-or-nothing problem.
2. The problem isn't consistent across all of the component acts. For instance, a person might smile but not look the other person in the eye. Again, not an all-or-nothing problem.

Many of us tend to take for granted all of these details of when and what. But instead, we must specify these details in order to cue the proper action for people having behavior problems. And then we must use reinforcement procedures to increase the likelihood that those proper acts will occur, and we must use corrective feedback to decrease the likelihood of wrong acts occurring. Usually we can develop good training programs after we've done such a task analysis. But in the past, the helping professions have often failed to help people, because they couldn't analyze complex tasks into sets of trainable parts.

- 4 Cite at least three components that make up the category of "good social acts."
- 5 What is a task analysis?

CONCLUSIONS

We've looked at an extreme instance of poor social behaviors, the problem of social withdrawal of many residents of mental institutions. We've seen how a task analysis of these social acts can point out the strengths and weaknesses of the person's actions. So now we might best summarize the details of this chapter with a series of questions and answers:

Why do so many residents of mental institutions show poor social behavior?
1. Often they have not learned the proper social actions.
2. Those who did have some social acts may lose them for any of several reasons:
   a. Punishment.
   b. Extinction.
   c. Their results were no longer rewarding.

After the social acts stop occurring, why may they remain at a low rate?
1. Extinction stays in effect.
2. Social rewards now directly strengthen competing, nonsocial acts.
3. The aversives for nonsocial acts may have lost control over these acts because they weren't paired with other aversives.

Why is the task analysis approach often better than a more traditional approach?
1. The problem isn't consistent across all settings.
2. The problem isn't consistent across all of the component acts.

In the next chapter, we'll see how we can set up a behavior modification program to improve the poor social skills of mental institution residents, basing the program on the behavior analysis in this chapter.

chapter 15
behavior rehearsal:
improving social skills

INTRODUCTION

How can you help a browbeaten wife deal with her husband in a more assertive manner?

How can you help a juvenile parolee decline a request to go along with the old gang for a few beers — a social trip that has always led to trouble?

How can you help a male transsexual — a young man who claims he is a woman trapped in a man's body — acquire the accepted male styles of walking, talking, sitting and relating to women?

How can you help a chronically unemployed person apply for a job?

How can you help a retarded adult acquire some basic survival skills — skills like crossing the street, riding a bus, and using the telephone?

This chapter was loosely based on the pioneering work reported in the following article: Gutride, M. E., Goldstein, A. P. and Hunter, G. F. The use of modeling and role playing to increase social interaction among asocial psychiatric patients. *Journal of Consulting and Clinical Psychology*, 1973, 40, 408-415.

How can you help a resident of a mental institution learn to interact with others?

You can use a powerful new method called behavior rehearsal — a method where people have a chance to rehearse complex skills they must perform in their normal, everyday life. Behavior modifiers are now using this new procedure to help people deal with problems that psychologists have rarely been able to help them with in the past.

In this chapter we'll study the method of behavior rehearsal by designing a behavior modification program to help the residents of a mental institution acquire some skills they will need in interacting with others. We'll also discuss why we need a special, planned training program to help people acquire such skills and why behavior rehearsal is so useful in these planned training programs. And we'll look at the details of the method of behavior rehearsal — the role of the trainer, what we may need to add to behavior rehearsal programs and how we should design the stimuli, or cues, to be used in behavior rehearsal.

THE NEED FOR A PLANNED TRAINING PROGRAM

Harper waited for Chet, the last student to arrive, before he started the class discussion. "Last class, we did a behavioral analysis of the poor quality of the social acts residents in mental institutions often perform. They have a good deal of trouble talking to other people. Now let's see what we might do to help them. I think we could design a behavior mod program to reshape those social acts, or to shape them, if the persons never learned them in the first place. Our program will be much the same regardless of whether persons have ever learned those social acts before. And I think we need to set aside a special time and place to conduct this special training program."

"Why don't we just change the reinforcement procedures on the ward where the residents spend most of their time?" Sid asked. "We could do that by having the ward staff attend to the residents when they engage in proper social acts and ignore them when they didn't."

Harper answered, "That makes sense, but we might not want to

start there. And here's why. When we rely only on attention from the ward staff, residents might take too long to learn new social acts they've never learned in the first place. And it might also take too long to get rid of the suppression due to their behavioral histories of punishment effects."

"I don't see why it should take so long to wipe out the suppression," Sid said.

"Well, what must happen for control by the punishment effect to stop?" Harper asked in return.

"Well, a punishment procedure will lose its control if you get the act to occur without producing aversives or removing rewards. Then as that act starts occurring without the aversive, the control by the behavioral history of punishment effects will weaken and the response will occur more and more often," Dawn said.

"I think you've got it," Harper said. "Now what would be an instance of that?"

Dawn answered, "Well suppose every time a woman opened her mouth, her husband put her down — he argued with her, called her stupid, told her not to bother him because he was watching TV. All those things are bad news — very aversive. So it looks like her husband has punishment procedures going that might suppress her talking. But suppose she ends up some place where people don't put her down when she talks. And maybe they even give her a few social rewards of agreement, or at least attention, when she does talk. Well now she's talking once in a while and not getting any aversives for it. So the suppression due to her past history of punishment effects should wear off, and she should start talking more and more."

"But it might not work that well for the poor woman," Dawn went on. "Suppose she had an even more oppressive behavioral history of punishment for talking. Then she might never recover from it. Suppose whenever she said anything at the dinner table, her folks always told her that children should be seen and not heard. And suppose her big sister made fun of her whenever she said anything on the playground. And that vicious oppression just kept going on and on when she got married. Then she might be in real trouble. She might not even start talking when she does get some place where people

won't put her down for it. She might not start talking because that act has been too well suppressed to even occur just a few times. So she's going to need more than just a nonpunishing world to help her."

"Right, the person must make the response without it producing some aversive event or removing some rewarding event if we're going to wipe out the suppression her behavioral history caused. But she may never. make that response if the past punishment procedures have suppressed it too much — and that's the problem. The response won't contact the changed procedure — the change that means the response no longer produces aversive events or loses rewarding events."

"Okay then, let's tie this back to the social acts," Sid said, "A history of punishment effects may have greatly suppressed social acts. So now those social acts may not occur very often. The response may not make much contact with the changed procedure — the fact that it no longer produces aversives or removes rewards. That means that the behavioral history of punishment effects will keep on suppressing those social acts even though they no longer produce aversive events."

"You've got it," Harper said. "But there's at least one more reason the person might not perform those social acts. The person might be getting so much rewarding attention for her nonsocial behavior that those nonsocial acts crowd out the social ones, not giving them a chance."

"So the control by the history of punishment effects may not stop because of two factors: (a) the suppression of social acts due to past punishment effects, and (b) the crowding out of social acts due to the rewards produced for nonsocial acts," Mae said, summing it up.

Harper followed, "And often we need a procedure with very frequent rewards if we want to shape a new response, even though we may only need rewards once in a while to keep that response going after the person has acquired it. Also, we can provide the small steps needed in a shaping procedure if we're working with the person in a planned training program. But we may have more trouble if we must depend on the chance programming of improved reinforcement procedures on the resident's ward.

"So a special training procedure would greatly help us develop proper social acts for three reasons:

1. It would make it easier to shape new skills or to reshape old skills.
2. It will make it easier to get rid of the suppression due to a past history of punishment effects.
3. It will allow us to get the social acts occurring at a high rate so that the lower density of reinforcement effects on the ward can maintain it."

- 1 How does a planned training procedure help us develop proper social acts (three reasons)? Explain the first two reasons.

WHY BEHAVIOR REHEARSAL WORKS

Now it was Juke's turn to push Harper a little more for details. "Okay, we agree we need a special planned training program. But what kind of program?"

"I'd like to try a method called 'behavior rehearsal,'" Harper replied. "The main feature of behavior rehearsal is that people rehearse the actions they need to perform in their normal world, but they do it in a special training setting." Then Harper turned to the blackboard where he wrote the following:

Behavior rehearsal: the rehearsal of actions in a special setting where the actor gets feedback based on the correctness of those actions.

"And there are quite a few reasons for doing this behavior rehearsal outside the 'normal world,'" Harper went on.

1. People can make mistakes without the punishment effects that might occur in a normal setting.
2. We can shape the skilled acts by starting with the simplest acts and making the role more and more complex only as they master each level of new skills.

3. We also use shaping. We do this by making sure that acts showing improvement produce rewards even though those acts are still not good enough to produce any social rewards in the normal world.
4. We can guide people through verbal feedback as to the exact feature of their acts — those that are up to par and those that need to change. And we can point out the nature of those needed changes.
5. We can make good use of imitation or modeling. We can give people cues for proper acts by showing them a model of those acts. Then they can imitate the model."

"Is that it?" Chet asked.

"There's one more reason for using behavior rehearsal.

6. We can also get rid of some learned aversive stimuli — the aversive stimuli the response produces. And here's how. These stimuli will lose their aversive nature if other aversive stimuli no longer follow them. And we're in a position to make sure no extra aversive stimuli follow the response in the harmless behavior rehearsal setting.

"I'd like to comment about those learned aversives. At first they often suppress social acts, even in behavior rehearsal settings (settings you'd think would be a cue for the absence of punishment procedures). And the persons may also show the activation syndrome — called 'anxiety' in this case. But stimuli may lose their aversiveness in the safety of the role-playing setting after the person repeats the acts a number of times without causing any other aversive events."

Sid raised his hand. "You keep stressing how crucial or important the trainer is. But I did something like that one time when I was trying to get the courage to talk a prof out of ripping me off. And it helped. So it seems like you don't always need someone else around when you're doing this behavior rehearsal."

"I think you're right, Sid," Harper answered. "Behavior rehearsal should also improve **performance** of our actions even if we rehearse those acts by ourselves without any outside critic. We can be our

own audience. We can say, 'My voice cracked a little bit that time. And I didn't look the imagined person in the eye. So I have to improve that. But I didn't make any smart remarks to them either. I didn't say anything hostile. And I didn't bad-mouth myself. So those parts were pretty good.'"

"But there are two reasons, however, an outside critic can help even more:

1. A trained critic will be better than the untrained performer in spotting flaws as well as good features in the acts. For instance, 'You did pretty well, except you kept rubbing your chin with your hand. You shouldn't do that.'

2. The outside audience will also provide more realistic and more effective cues that our acts won't make contact with punishment procedures. We usually don't get heavy aversive stimuli when we practice our little speeches in the privacy of our own bedrooms. The problem comes when we do those things in front of other people. We need to rehearse them in front of others, so the cue control can generalize to more normal settings involving other people."

Mae added, "Of course, the behavior rehearsal should still take place in a special training setting, so that no aversives will occur whether or not the person is using an outside critic. When you first start, you don't rehearse walking the tightwire 100 feet above the ground with no net."

"Good point," Harper said.

Now Juke had a question. "Is that all we've got to do, just run those folks through their behavior rehearsal sessions and then turn them loose on the outside world?"

"No, often we need to do more," Harper replied. "Sometimes (under special conditions) behavior rehearsal alone can cause people to act that way in their normal, everyday world where they need such actions. And sometimes the normal rewards will be frequent enough and strong enough to maintain those acts in the normal world.

"But often you'll need to insist that the person really try out

those actions in their normal world. And you may also have to arrange for other persons in that world to give more rewards for those acts than is the custom — at least until they start to occur fairly often. For instance, you might need to train some of the other residents and staff in the institution to give added social rewards for all the attempted social acts the resident performs."

Mae raised her hand. "Okay, now that you've got us turned on to solving the world's problems with this behavior rehearsal, where do we go from here?"

"Well, Dr. Stein out at BSH (Big State Hospital) has been working with me on a set of four videotaped programs. They show people modeling proper social acts in many settings.

"And we'd like to give you all some training in how to run this behavior rehearsal program. Then you can help us work with these residents. You can help out, as part of your work for this course, because I think you'll learn a lot more if you're doing things while you're reading about them."

- 2 Define behavior rehearsal.
- 3 Why should we teach social behaviors using behavior rehearsal in special settings (this answer has six parts)?
- 4 Why does it help to have an outside critic, even though we can improve our acts when using behavior rehearsal on our own?

THE DESIGN OF CUES FOR BEHAVIOR REHEARSAL

In designing their videotapes, Harper's students made use of three major results from research on imitation and factors that effect behavior.

1. The narrator for the videotapes was a high status person. Directions from high status people are more likely to be a strong cue; in other words we tend to follow the directions of such people.
2. The acts of models like ourselves in age, sex and status are

likely to be strong cues for imitation. In other words, we tend to imitate models like ourselves (though the high status person may be likely to influence us on other occasions also). So the models were much like the patients in age, sex and status.

3. The acts of models who get rewards are also likely to be strong cues for imitation. In other words, we tend to imitate behavior we've seen produce rewards. So the model got frequent and clear-cut rewards when he interacted socially.

But we didn't inherit these three factors that affect the strength of cues — cues in the form of spoken direction and in the form of models for imitation. Instead, cues with those features are often strong cues because in the past the actions they have cued have produced rewards. We can see this for each of the above three factors:

1. What about instructions from experts? In the past, such instructions have **cued acts** that would be more likely to produce rewards. And why is this?

   a. Experts are often able to tell us how to deal with our world in ways that will help us get more rewards and avoid more aversive events in life.

   b. Experts are often able to dispense rewards for following instructions, for instance, our parents or classroom teachers. "Chetty, you were a good boy all day, just like Mommy asked, so I'm going to give you an extra serving of dessert."

2. What about persons with the same level of skills as we have? In the past those actions may have served as cues for reinforcement procedures. They probably wouldn't have acted if there were not cues for reinforcement in effect. And if it works for them, it should also work for us. Why? Because we most likely had enough skills to succeed if they did.

   But sometimes the actions of persons with much greater skills will not cue reinforcement for us. For instance, the four-year-old child will not get many rewards for hopping on his sister's ten-speed bike. And, in fact, he may even pick up a few aversive events like a fall that produces a skinned knee

and a few harsh remarks from big sister as she carries her smashed treasure to the repair shop.

3. What about seeing other persons' actions produce rewards? In the past, their actions may also have cued our imitative acts which then may have produced rewards for us in turn. Why is this? Because the world often reacts the same way to us as it did to others. But a lack of rewards for other persons' actions can cue extinction. For instance, suppose we saw someone put a quarter in a candy machine and suppose we saw the person not only fail to get her candy bar, but also fail to get back her quarter. Then that model's act would not cue reinforcement for imitation.

- 5 Why is the behavior of high status persons often a strong cue for imitation?
- 6 Why is the behavior of persons similar to your age, sex and status often a strong cue for imitation?
- 7 Why are you likely to imitate behaviors of others that you've seen produce rewards?

THE BEHAVIOR REHEARSAL SESSION

The eight residents sat with Juke, watching the videotape.

"Since we want you to feel better and since we also want you to be happier, we'd like you to do all these things, just like the patients in the movies. So pay close attention and learn what we do. Thank you."

Dr. Stein's taped intro stopped and the scene changed to a model resident seated alone in the ward. (The model is the person whose acts should cue the same sort of acts on the part of the viewers.) Then another resident walked up to the model.

Resident: Hello, my name is Tom. What's your name? (Extends his hand.)

Model: I'm Steve. (Shakes his hand and looks at the resident.)

Resident: How are you today?

Model: Fine thanks, and you?

(Some more small talk.)

Resident: . . . I'm really happy to meet you. It's always nice to meet new people and to have new friends to talk to, too.

(Later, the model is seated alone, reading a newspaper.)

Resident: Can I see a section of the newspaper?

Model: Sure, which section would you like? (Looks at the resident.)

Resident: The sports page if you've finished it already. Do you read the sports page?

Model: Yes, I do. I like reading about football and hockey. I've finished that section, so here it is. (Looks at and leans toward resident.)

Resident: Thanks a lot. That's nice of you to share your newspaper. I also like to follow the football and hockey scores.

Model: Good . . . Maybe we can talk about our favorite teams after you read the sports news. Who do you think will go to the Super Bowl this year?

Resident: I don't know, but I think it'll be Dallas again. Say, y'know, I really like talking to you about sports.

Then Dr. Stein reappeared on the TV screen. "You just saw some very important movies which showed you how some patients were able to get to know and talk to another person who came over to them . . . These patients felt much better and were happier because they were able to get to know and talk with that person. When we talk with others, we are happier — we have more fun. We want you to feel better and be happier, too, so now we want you to do all the things you saw the patients in the movies do, right here with the other people in your group. Thank you."

The videotape was over — the imitative cues were over. Now was the time for action, for behavior rehearsal. Juke asked the residents to repeat the scenes they had just seen, playing the role of the model resident talking to someone else, while Juke or another resident played the role of the other person. Juke smiled at the residents and gave them lavish praise each time they imitated the right way. And he gave them praise for trying to go along with corrective feedback when

they did a poor imitation of the model's social behavior. The residents greatly improved their social skills as a result of this role playing. But the procedure wouldn't have worked nearly as well without the cue control of the instructions in the TV intro and the models of proper social acts.

CONCLUSIONS

In this chapter we've looked at the details of the behavior rehearsal procedure — a procedure where persons have a chance to rehearse complex actions before performing those actions in their normal settings. Let's sum up those details with a series of questions and answers:

Why do we need a planned training program to help people acquire complex behaviors?
1. The planned program will make it easier to teach new skills.
2. The planned program will allow for more rapid breakdown of the effects of the punishment procedures — the effects that caused the original suppression of those acts.
3. The planned program will allow us to get the acts occurring at a high rate — a high enough rate so that the lesser amounts of reinforcement effects in the normal world can maintain them.

Why should we teach complex behaviors using behavior rehearsal in a special setting?
1. The people can make mistakes without the punishment effects that might occur in the normal setting.
2. We can shape more and more complex actions.
3. We can use reinforcement effects to make slight improvements more likely.
4. We can use verbal feedback.
5. We can use imitation and modeling.
6. We can allow a behavioral history of punishment effects to lose its control.

Why does it help to have an outside critic even though we can make some improvements when we do behavior rehearsal by ourselves?

1. A trained critic can give us more accurate feedback.
2. The cues for those acts paired with the absence of punishment effects have a chance to generalize to another person.

Do we need to do anything besides behavior rehearsal in teaching social behaviors?

1. Sometimes behavior rehearsal is enough.
2. But often we need to give added instructions.
3. Sometimes we need to arrange for a more rewarding "normal" world.

What features should we look at when we design cues for behavior rehearsal?

1. Have the instructions come from a high status person, because:
    a. In the past, experts have often given us instructions that have led to reinforcement (or cued acts that have).
    b. In the past, experts have given us rewards for following their instructions.
2. Models should have the same level of skills as the imitators, because in the past imitating such models often led to more rewards than imitating models who were much more skilled than we.
3. Models should get frequent rewards, because in the past such models have often cued imitative acts that produced rewards.

In general, we've seen that we can use this new procedure, "behavior rehearsal," to deal with behavior problems that used to seem hopeless. As an example, we've looked at behavior rehearsal as a tool for helping people acquire basic social skills. In a later chapter, we'll see another example of behavior rehearsal. We'll see how behavior rehearsal helped a woman deal with a strange problem which had made her life miserable. She wasn't able to buy her own clothes without her dominating mother telling her which clothes to choose.

ENRICHMENT

Imitation and Behavior Rehearsal

The imitation and behavior rehearsal methods differ only slightly. The essense of the imitation method of changing behavior involves simply presenting an imitative cue or model under conditions where observers can match their actions to those of the model — where they can imitate the model. In many instances, you can rely on people's behavioral histories for imitation to generalize to the training setting, so that they imitate your model. This happened when the institution resident imitated the model who was sitting in the waiting room, the model playing the part of another resident. But you can make it more likely that persons will imitate by asking them to do so, as you may do when you teach language skills to retarded children. And, when necessary, increase the likelihood of imitating by following their correct imitative acts with reinforcement effects. Imitation training can occur in two places:

1. It can take place in a special setting before getting the behavior to occur in the natural setting.
2. It can take place in the natural setting itself, as you might do when you use imitation to teach a friend how to eat with chopsticks while at the Canton Restaurant.

On the other hand, the essence of behavior rehearsal involves persons practicing certain response patterns, often of a complex social nature. The cue for the behavior rehearsal actions might be an imitative cue, or model, or it might simply be verbal instructions. For instance, you can provide an imitative cue by showing a resident how to interact with others, or you can provide verbal instructions by telling the resident how to interact ("be sure to smile").

As another example, you can show people how to respond to an aversive demand by having a model demonstrate a mild, but assertive response that will prevent an aggressive response from the demander. Or, you can instruct people to be careful not to say anything that will cause the demander to reply with an even more aversive remark, while being careful not to give in to the person's aversive demands.

Behavior rehearsal always takes place in a special training setting. For instance, you arrange for someone to make an assertive remark and then you give the person being trained a chance to reply in a nonhostile but assertive manner.

So the behavior rehearsal and imitation methods differ in two ways:

1. The cue for imitative acts is always an imitative model, while we can use verbal instructions in behavior rehearsal.
2. Behavior rehearsal always takes place in special training settings.

The two methods are alike in two ways:

1. They often involve repeating the act.
2. We use reinforcement procedures and feedback to shape the final performance of the act, until it closely matches the ideal.

- 8 How do the imitation and behavior rehearsal methods differ (two ways)?
- 9 How are the imitation and behavior rehearsal methods alike (two ways)?

chapter 16
assertiveness training

INTRODUCTION

Most of us need to learn how to act in a more assertive manner. Do you ever find yourself failing to get rewards because you can't bring yourself to ask for them? Or do you ever find yourself putting up with aversives because you can't bring yourself to ask people to change something they're doing? Did you fail to date Harold Handsome just because you couldn't bring yourself to ask him? Did you fail to get a second serving of fried codfish tongues just because you couldn't get yourself to raise the issue? Did you accept a grade you thought was too low just because you couldn't get yourself to discuss it with Professor Percy Perfect? Did you eat over-cooked, crispy-critter steak just because you couldn't ask Walter Waiter for a new serving? Did you have the movie, *Love Story*, ruined just because you couldn't ask Gordon Giggle to stop laughing so loudly? Did you put up with annoying acts from roommates, spouse, parents, children, fellow workers, etc., just because you couldn't ask them to change?

Yes? Then you need to learn more assertive ways of dealing with your world.

Do you ever find yourself losing rewards or getting aversives because you can't bring yourself to say "no"? Did you ever eat fried

codfish tongue just because you couldn't say "no"? Did you ever go to a party, movie, opera, play, opium den, ball game, cockfight, senior prom, or college just because you couldn't say "no"? Did you let Throckmorton Thumbs play your Lawrence Welk LP on his ancient record player with the bamboo needle even though you knew the record surface would look like the Grand Canyon when you got it back? Did you loan Ronald Rip-Off your brand new copy of *Hugh Hefner: Philosopher of Our Times* even though he hadn't returned Cant's *Critique of Pure Treason* that you loaned him way back when you were a freshman in high school? Did you loan your class notes to Walter Welch (the guy who never bothered to come to class himself) even though it made you furious to do so? Did you let Erik Elbow get ahead of you at the sales counter even though you had been standing there for two hours?

Yes? Then you need to learn how to assert.

On the other hand, do you get uptight, aversive and aggressive when you do ask someone to do something different or when you say "no" to someone? Did you come on hostile with Professor Percy Perfect when you asked for a grade change, perhaps saying you wouldn't even have to waste your time dealing with this issue if he didn't have the IQ of one peanut? Did you find yourself laying a little zap on Walter Waiter when you asked him to take back the Kalamazoo-Kut steak he had just tried to pawn off on you after he had dropped it on the floor — perhaps asking him if he hadn't waited tables at the Mission of the Misanthrope down on Skid Row? Did you tell Bobby Bigmouth that if he knew half as much as he thought he did he would know he didn't know half as much as he thought he did? Did you ever put up with annoying behaviors as long as you could and then blow your top — always aggressing, not really asserting.

Yes? At least once in a while? Then you need to learn how to assert. But what does it mean to assert?

To assert: to ask someone to act in a way that will either increase your rewards or decrease your aversives.

Go ahead, tell the waiter
there's a fly in your soup,
I dare ya!

THE IMPORTANCE OF BEING ASSERTIVE

Often asserting suggests that you are asking for something which is your right according to social custom, so this may differ somewhat from simply asking a favor. But how does asking the waiter for ham and eggs differ from asking him to turn the temperature up? Perhaps they differ in the chance that the person will do as asked without responding in an aversive manner. So when you ask people to act in a way that increases your rewards and decreases your aversives, such a request may be assertive or it may not be. It will be assertive if there is some chance of an aversive reaction, otherwise it won't be assertive.

Asserting is a useful skill, as it allows you to get what you should have with as few aversive results as possible. And by asserting, we don't mean demanding what you want, being harsh and aversive. Asserting doesn't involve aggressing toward those persons you're making your request of. Asserting involves asking for what you want in a calm, reasonable, mature way.

In the next sections, we'll look at why people have trouble asserting, and what they can do about it. We'll see that they have trouble asserting because assertive acts may have produced aversive stimuli — aversive reactions from the persons they are asserting to, aversives of rejection, and self-given aversives. But we'll see that people can develop assertive actions through behavior rehearsal, a method that allows learned aversive stimuli to weaken and at the same time allows people to learn good techniques of asserting. We'll also see some of the details of how behavior rehearsal works.

- 1 What are the three general conditions that indicate you may need to learn to assert?
- 2 Define asserting.

WHY DO WE ALL HAVE TROUBLE ASSERTING?

Why do you have trouble asserting? Most of us fail to assert some of the time, and some of us fail to assert most of the time. Yet you

know how to say the words. You know how to ask someone to move when they're standing on your toes. So why don't you assert?

Whether you assert depends on the current cues and our behavioral history. Most of you have had a history where punishment effects have suppressed assertive acts. And there are three main sources of those punishment effects:

1. The first source of punishment effects for assertive acts is direct aversives from the person you are asserting to. Professor Percy Perfect may still tell you he's going to lower your grade even further, now that you've raised the matter, even though you are much more tactful in asserting than we suggested before. Or Walter Waiter may still stuff the steak down the back of your shirt. Or Gordon Giggle may still dump his HBP (Hot Buttered Popcorn) on you. Or when you politely mention something friends have been doing that you find aversive, they may still point out a few of your flaws they had been meaning to discuss for some time, or they may still pout and cry. All aversive events. And, why do they respond to your requests with those aversives? Perhaps for three reasons:

   a. You may be asking something of them that will mean they'll lose some slight reward or that they'll have to exert some slight amount of extra effort. The waiter will have to throw out the first serving and go to the bother of getting another.

   b. Most of the time, the very fact that you must assert implies that the other person is at fault, since you are just asking for what others would agree you shouldn't have to ask for: a good meal, a fair grade, a chance to enjoy the movie. So you're giving the hint of a social aversive. And, again, such aversives tend to make it rewarding for the other person to deliver an aversive in return; in other words, aversive stimuli often cause an aggressive reaction.

   c. Your attempt at asserting may, in fact, come off more like the aversive aggression we mentioned before, Walter, I wouldn't serve this meal to a dog." "Perfect, the only

thing worse than my grade is your course." Or simply, "Gordon, pipe down."

So you may add the insult of your explicit, aversive aggression to the injury of your implied faultfinding. And, most likely, that will produce counter aggression in the form of an aversive retort. And so there you are, your attempt to assert just produced punishment effects.

But why did your attempt to assert turn into such aversive aggression in the first place? Well, often you're also responding to an aversive condition, like the chance of losing a reward, like a good meal or a good grade, or you're being presented with an aversive stimulus, like the blaring strings of Montovani from the stereo in the upstairs apartment at 3:00 a.m. And both types of events tend to make it rewarding for you to toss out a few aversives yourself; both losing rewards and getting aversives makes it likely that you will aggress.

So, three reasons people aggress when you make assertive requests are:

a. They may be losing a reward or getting an aversive task.
b. Your request may hint at a criticism.
c. ·You may make your request in an aversive, aggressive manner.

2. The second source of punishment effects for assertive acts is a little more hidden. It takes place where, on the face of it, only extinction would seem to be involved. It's the learned social aversive of rejection.

"Why don't you ask her for a date?"

"I couldn't do that."

"Why not?"

"She might say 'NO.' "

"So what? What have you got to lose?"

"What've I got to lose? My self respect. Like she said 'No.' She rejected me. She doesn't like me. She doesn't find me worthy."

Aversive notions! Of course, her "no" is a conditional aversive. Clearly her "no" will be an aversive for most of us if

she says, "No, I'm busy," and lets it go at that. But suppose she says, "No, I can't right now, because I'm studying for an exam; but I certainly hope you call back in a few days," then, at the worst, her "no" is simply extinction, and perhaps even a slight social reward, since she thinks enough of you to ask that you call back.

3. And the third source of punishment effects for assertive acts, you provide yourself. It may result from rules you've learned, often as a child. "Don't be pushy." "Ladies don't act that way. And you should always be a little lady." "There's nothing that bugs me more than a pushy woman." Such rules get strong cue control over your actions, even moreso if you're getting rewards for being a little lady. So because of your behavioral history you may give yourself learned aversives when you merely start to assert — aversives paired with breaking the proper-conduct rule — aversives that suppress the response before it even has a chance to occur.

So, in summary, the three sources of punishment for assertiveness are:

1. Direct punishment from the person you're asserting to.
2. The learned social aversive of rejection.
3. The self-inflicted aversives resulting from the rules against asserting.

No wonder your behavioral history causes you to shy away from assertive acts. Everything seems to go against asserting. But assertion has two big things going for it:

1. The reinforcement effects of getting rewards and getting rid of aversives.
2. The reinforcement effect of escaping self-criticism.

Some people tell themselves they're letting the world push them around because they aren't asserting enough. So they may be giving themselves a good many aversives in the form of self-criticism whenever they fail to assert. "What are you? A chicken? You should be ashamed of yourself! Nobody should put up with that stuff." "Just

because I'm a woman doesn't mean I shouldn't stand up for my rights." And so as a result of these factors in support of asserting, all sorts of people are reading all sorts of books and taking all sorts of courses on how to assert.

- ▪ 3 What are the three sources of punishment effects for asserting?
- ▪ 4 What are three reasons why others might aggress toward us if we make assertive requests of them?
- ▪ 5 What are two advantages for assertiveness?

LEARNING HOW TO ASSERT
THROUGH BEHAVIOR REHEARSAL

In the last chapter we introduced the term "behavior rehearsal" — the rehearsal of acts in a special setting where the actor gets feedback based on the correctness of those actions. Perhaps the best way to learn to assert is through behavior rehearsal. Why? Because it may allow two things to happen:

1. It provides a chance to weaken learned aversives paired with assertive acts. In other words, the mere act of asserting may have become a learned aversive — perhaps because of false rules, like "ladies don't act that way." But with behavior rehearsal you can act out more and more assertive forms of behavior without running the risk of someone reminding you that "ladies don't act that way." And if the person doesn't contact such aversive events the other learned aversives lose their aversiveness.

2. And at the same time, you may learn proper, tactful, graceful and effective forms of asserting, shaped through rewarding social approval and through the guidance of positive and corrective feedback.

"Say, Walter, this steak is well-done, and I asked for medium rare. Sorry to be so picky, but I really do want it medium rare." That should get you what you want without any aversive reactions from

Walter. But some people are afraid they will give the other person a chance to cop out if they're too gentle in their requests, if they take too much of the blame on themselves. But that doesn't happen often. Most likely Walter will find it rewarding to help you out with your problem; he'll find it rewarding to be generous. But suppose it doesn't work that way. Suppose Walter says, "I think you are too picky. I can't take back your steak. This ain't the Ritz, you know." Then you have to bring out the heavy guns; then you have to say, "Well, to tell you the truth, Walter. I don't really think I'm being picky at all. In fact, this steak is just too overdone. And I can't accept it. So I'd appreciate it if you'd get another one for me — one that's medium rare." And if that doesn't do it, then you'll just have to say, "May I see the manager please." But most of the time you'll get a new steak, medium rare, with your first assertive request.

Some people object to having to say, "Sorry to be so picky" when they assert. They ask, "Why should I take some of the blame if I think the whole thing is Walter's fault?" They get morally indignant. But we ask, "What do you want, a medium-rare steak, or a hassle with Walter?" If you want the medium-rare steak, then you should do everything you can to make it easy for Walter to give it to you. You should set things up so Walter will get the rewards of being a generous person in helping you out with your problem. And you should set things up so that Walter will not have to encounter the aversives of admitting that he was at fault if he fills your request.

Effective asserting seems to have two main features:

1. You want to state your request so as to get rid of any hint of faultfinding. And certainly to avoid any clear-cut aversives in the form of insults. In that way you're not hurting the person unduly and you're not risking much aversive abuse.
2. It also helps if your request seems just, since it might then be somewhat aversive to others if they denied a just request.

So, there are two ways in which assertion training illustrates our motto, **Deal with It**:

1. Assertiveness training gives people the responses to, in fact,

really deal with their world. So now they, themselves, can **Deal** with **It**.

2. The very acts of teaching and learning those assertive actions are good examples of **Dealing** with **It**. The trainers and their students have seen the lack of assertive acts as a problem to be solved — to be dealt with — not as a cross to bear in a passive and resigned manner, like it has been throughout most of history.

Now we have the tools of behavior analysis. So now we can look at assertive actions as a complex set of acts that should occur in many settings. We can look at assertive acts as tasks to be task analyzed. And now we have the tools of behavior mod. So now we can teach those assertive acts to those who want to learn them. Now we no longer need accept the lack of good assertive behavior as a fixed character flaw we inherit. Now we can treat it, instead, as the learning of wrong acts and the failure to learn proper acts.

Now we really can **Deal** with it.

- 6 What two things can happen through behavior rehearsal that cause good assertive acts to develop?
- 7 What are two main features of effective asserting?
- 8 In what two ways does assertiveness training illustrate the motto, **Deal with It?**

HOW GRETCHEN LEARNED TO SAY "NO" TO MAMA

Let's look at a case of assertion training through behavior rehearsal, so we can more clearly see the behavioral processes involved. This case really happened. Gretchen was 22 years old, but her mama always went shopping with her, always told her what clothes to buy

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This section is based on a case reported in Sundel, M. and Sundel, S. S. *Behavior Modification in the Human Services: A Systematic Introduction to Concepts and Applications.* New York: Wiley, 1975, 104-105.

and what clothes not to buy. And Gretchen always bought whatever Mama told her to buy, never buying things Mama told her not to buy, at least not when Mama was along. Gretchen did this even though she paid for all of her own clothes.

Gretchen didn't like the clothes her mama picked out for her. But she never said no. She couldn't even look Mama in the eye when trying to talk about her clothes; she just looked at the floor, shuffled her feet, and mumbled. She couldn't assert with Mama. But she rarely wore those clothes. Instead she would sometimes sneak away and buy clothes she wanted.

Why didn't Gretchen assert with Mama? Why didn't she tell her mother she would buy the clothes she wanted instead? Why? Because Mama always put down her choices, a punishment effect for her assertive acts.

So what did Gretchen do? She went to a behavior modifier to learn how to assert. She worked with the behavior modifier to prepare a list of assertive acts, ranking them in terms of their aversiveness. For instance, she found it only slightly aversive to tell her mother which store she preferred to shop in. She found it somewhat aversive to tell her mother what color dress she wanted. And she found it very aversive to try to buy clothes she had selected herself when her mother was along.

Then Gretchen and the behavior modifier, the trainer, began behavior rehearsal with the acts that were least suppressed by those learned aversives, the ones that Gretchen ranked as being least aversive. The trainer told Gretchen what to say and how to say it and then they rehearsed the scene, the trainer acting as Gretchen's mother.

When Gretchen had trouble asserting, the trainer would act out the proper behaviors, serving as a model for Gretchen. And after each run-through, the trainer would give social approval and also corrective feedback based on her tone of voice, eye contact, posture, facial expression, and what she actually said. For instance, the trainer might tell her she should look at her "mother" more or speak in a calmer tone of voice.

In this case, a major factor in helping Gretchen may have been the stopping of the punishment procedures. Gretchen didn't assert

in the presence of her mother because her mother was a cue that sup-
pressed asserting, because asserting in her presence produced learned
aversives. For instance, her mother would criticize her choice of
clothes — if Gretchen asserted to the point of picking out some
clothes herself. But in behavior rehearsal, Gretchen began to assert
to her make-believe mother, as the suppression resulting from the
past punishment procedures decreased. After a while the assertive
acts were no longer suppressed in the presence of the make-believe
mother.

We said that stopping the punishment procedure was the major
factor in helping Gretchen — but what about the use of all that social
approval and feedback? Wasn't Gretchen learning how to assert? Per-
haps, but perhaps not. Gretchen may already have been able to assert
fairly well with some people, in some settings, about some issues —
with people, settings and issues where punishment effects had not
suppressed those assertive acts.

Then why did the trainer use so much social approval and feed-
back? It may well be that those social rewards and feedback merely
got Gretchen to make a response that had been suppressed. So for
Gretchen, behavior rehearsal may have functioned mainly as a time
to get rid of the suppressive effects of an earlier punishment proce-
dure — not as a chance for her to acquire new acts she had not already
learned.

What effect will this artificial behavior rehearsal have when Gret-
chen tries to deal with her real mother, in all her aversive glory? Will
Gretchen now respond to her real mother in the same way she re-
sponds to her make-believe mother? In other words, will the cue con-
trol of the make-believe mother generalize to the real mother? Well,
clearly the cue control from the real mother generalized to the make-
believe mother. Otherwise, Gretchen's make-believe mother would
not have suppressed her assertive acts much as her real mother had
done. So now the new cue control acquired by the make-believe
mother should also generalize back to the real mother. And the
make-believe mother now acts as a cue for Gretchen's assertive acts
(since a reinforcement procedure and not a punishment procedure
was in operation there). Now the real mother should also act as a cue

for Gretchen's assertive acts (since that cue control should generalize from the make-believe mother back to the real mother).

But one question still remains — what happens when, at last, Gretchen does act in an assertive manner with her mother? Will her mother suppress those acts with more of her aversive remarks? In fact, she did not, at least not to any great degree. And why didn't Gretchen's mother suppress her new assertive acts? To suggest some answers, we must first note two features of the procedure the trainer used to help Gretchen:

1. When dealing with her real mother, Gretchen started with those assertive acts her mother had suppressed the least. Then when she was able to perform those acts with no great problems, she progressed to the acts her mother had suppressed to a greater extent.

2. Gretchen performed those assertive acts only after she had rehearsed them many times in the safety of the behavior-rehearsal setting, allowing the past punishment effects to completely break down.

Now those two features of the procedures may have combined with features of the real setting to cause the mother's failure to keep on suppressing Gretchen's new assertive acts. Several factors might have been involved:

1. Gretchen's new assertive style failed to cue many aversive reactions from her mother because this new style differed a great deal from her former style. And her mother had learned to be aversive in the presence of timid attempts at assertive acts, those that were wishy-washy, apologetic and faltering. But Gretchen's old style of asserting differed a great deal from her new style, where she spoke in a clear, calm, confident tone, looking her mother in the eye all the time. Thus, the stimuli produced by her old style may not have generalized much to the stimuli produced by her new style. And that's why her new style might not have cued her mother's efforts at aversive countercontrol.

2. Also the mother might not have been able to suppress Gretchen's new assertive acts, even if she did make a few, feeble attempts at aversive countercontrol. Those assertive acts were no longer so easy to suppress because they had produced a great many social rewards from the trainer.

3. Even the mother's feeble attempts at aversive countercontrol soon stopped when they went without reward a few times. In other words, Gretchen did not comply by buying the clothes Mama wanted her to buy — the usual reward for Mama's acts. And her attempts stopped so quickly because they had had such a consistent effect in the past — they had always produced a reward — suppressing Gretchen's assertive acts.

The trainer also gave Gretchen social approval when she reported attempts at asserting with her real mother, and the trainer gave suggestions when she encountered any problems. So all those factors combined, allowing Gretchen's assertive acts to survive and even flourish.

There are two ways the punishment procedure can suppress assertive acts:

1. With Gretchen, the punishment procedure was still going on when she came to the trainer for help.

2. But often the original, outside source of the punishment procedure is no longer present, yet it keeps suppressing the assertive acts, almost as if it were still there.

So, what suppresses the assertive acts, if the initial source of the aversives is no longer there? Often the suppression results from the cue control of a harmful rule that no longer applies, if it ever did — "ladies don't act that way." For others, the original punishment procedure may have been so effective that assertive acts remain suppressed without the help of bad rules.

Assertive acts are more easily maintained if people don't have to deal with an on-going, outside punishment procedure, once they do manage to assert — it helps if that punishment procedure is no longer in effect. But, as we've seen, assertiveness training can also work,

even when the original cause of the suppression is still present, as with Gretchen and her mother.

Gretchen's case has shown how we can use assertiveness training to help people get rid of the suppressive effects of past punishment procedures for asserting. We can do this by giving the people a chance to assert in a special setting where no punishment procedure is present. We can also use assertiveness training to help people acquire new ways of asserting — ways they had never done before. And we do this in much the same way — with instructions, modeling and shaping — as we've seen in the last chapter, where we discussed using behavior rehearsal with the residents of a mental institution.

- 9 As a trainer, what would you do if someone was having trouble asserting during behavior rehearsal?
- 10 As a trainer, what would you do after each runthrough of someone's assertiveness training performance?
- 11 As a trainer, why would you use a great deal of feedback and social approval for asserting even if the person you were training already asserted in some settings?
- 12 If you train someone to assert in a special setting, on what basis would you assume the new assertive acts will generalize to other settings or persons?
- 13 True or False: A punishment procedure can suppress assertive acts when the punishment procedure is still in effect or when the punishment procedure is no longer present. Explain.

CONCLUSIONS

You assert when you ask someone to act in a way that will help you — in a way that will increase your rewards and/or decrease your aversives. Assertiveness is a useful act. But many people have trouble asserting because assertive acts may produce punishment effects — most likely from three sources:

1. The person you are asserting to.

2. Rejection.
3. Self-given aversives.

But you should learn to assert:

1. To get your rewards and to get rid of your aversives.
2. To avoid self-criticism for not asserting.

Behavior rehearsal is a good procedure for learning to assert because:

1. It weakens the learned aversives associated with asserting.
2. It allows for the learning of good techniques of asserting, such as:
   a. Assert without criticism.
   b. Make your request too reasonable to deny.

In such behavior rehearsal you:

1. Start with acts that are least suppressed.
2. Model difficult acts.
3. Use social approval along with detailed feedback.

You will be likely to assert back in your real-life setting due to stimulus generalization from the training setting to that real-life setting. And once some assertive acts generalize to the real-life setting, they are likely to continue because:

1. Proper asserting may not cue aversive reactions.
2. Well-learned assertive acts are less likely to be suppressed.
3. The original punishment procedure that suppressed the assertive acts may no longer be present.

Having good assertive behavior is crucial in getting along with others. **A lot of us can stand some improvement in our assertive behavior, and some of us can stand a lot of improvement in our assertive behavior.** Such improvement can greatly increase the quality of our lives. So once again, we can use behavior modification to help us live better lives.

chapter 17
using behavior modification to get along with others:
love and marriage

INTRODUCTION

Life isn't easy. It's hard to lead a satisfying, worthwhile, meaningful life. But movies, TV, books all program you with the myth that you will achieve everlasting, eternal bliss once you get over this one last hurdle, once you solve this final problem. But there is no final problem. Life is a series of never-ending problems. And they're pretty much the same problems. But some of us have learned how to deal with those problems, while others of us have learned how to make

them worse — how to make ourselves and the people around us even more unhappy. And other people are usually our biggest source of those problems, our biggest source of misery — but our biggest source of joy, too. Life would be great if it weren't for the people in it — but also, life would barely be worth living if it weren't for those very same people.

So what can you do? You must learn how to deal with life — how to get the most joy and the least misery out of your interactions with others. Not an easy task. Not a task many have completely suc- ceeded at. But a task you can get better at. And you'll make the most lasting progress if you concern yourself with yourself, if you look at yourself as the problem, if you ask "what am I doing wrong?", not "what's the matter with that person?" whenever you have trou- ble with someone else. Become a problem-solver, a trouble-shooter of personal relations (especially your own) — a person who faces life, rather than one who hides from life hoping it will go away along with all of its messy problems.

In short, you **deal with it**. Dealing with it — a simple, straightfor- ward, often successful approach. And yet a method that's hard to practice — hard because you've learned so many ways of **not** dealing with it — hard to do because you're afraid to deal with it — hard to do because so many of your relations with other people are sup- pressed by fear — by the chance of an aversive interaction — by the chance that they will think less of you — by the chance that they will put you down. But if you can get yourself to act in a bold manner — to deal with life, you will succeed.

1. You must **learn to assert** — to state what bothers you and what makes you happy. And you must learn to do so in a graceful way.

2. Then you must **learn to negotiate** to set the occasion for the other person to act in ways that will not cause you misery, to act in ways that will make you happy, to act in ways that will even bring you joy — in short, to act in ways that lessen your aversives and increase your rewards. And, in turn, you must do the same for the other person.

3. And once you've set the occasion, you must give feedback and get feedback, so that you can both become skilled at giving and getting the most rewards and the least aversives, so that you can both become good at responding to the cues other persons give about what their rewards and aversives are. (Though those rewards and aversives are probably much the same as for you, so you should also learn to look inside.)

Now, we'll see how all of this applies to real life by looking at a case where two people are having trouble getting along. The case is based on, more or less, real characters. If you haven't met them, you will. In fact, if you look a little closer, you may find the person they remind you of is you.

A MARRIAGE IN TROUBLE

"I'm clever, biting, brilliant, witty . . . a great put-down artist. I can dig out anyone's flaws, no matter how carefully hidden. I can describe them in rich detail, much to the delight of the spectators, especially my old lady — I can turn the victim's head inside out. "And then my old lady takes that head and plays with it like a basketball. She dribbles it down the court with such bold daring that her fans — the fans of the cute put-down — sit there breathless. At last she bangs her victim's head through the basket, scoring two more points for our team. And I always have to chuckle as I admire the skill with which she works them over.

"But no one escapes. And I mean no one. Her family, my family, most of her friends, all of my friends and even me. And it's funny. I mean really funny. And she's right. They are all slobs. We all are. Still it does bring me down a bit when she tears apart every friend I've got. That's starting to make me feel even worse then her daily put-downs of me. And I know my father's shortcomings as well as she does; so why doesn't she leave him alone?

"Of course, she isn't always that up-front. Sometimes she says something that takes me half a day to realize she was putting me down.

"But I'll tell you, after four years of this, she's startin' to really get to me. In fact, I'm ready to pack it in."

"Didn't she stop her put-downs when you stopped yours?"

"Well, to tell the truth, I never really did stop putting people down, because she enjoys it so much. And besides that seems to be the only thing we really share. But I sure wish she'd stop it. Then maybe I would too."

"Didn't she stop her put-downs when you asked her to?"

"Well, to tell the truth, I never really asked her to. Why bother? She wouldn't stop it anyway. She'd just put me down for asking. So I never say much. I just smile, keepin' it cool. But I'm going to leave her now, 'cause I can't keep it cool anymore."

★   ★   ★

"Hey, Nellie Negative, what's happening?"

"I'm thinking about splitting from my old man."

"How come?"

"All he does is put me down."

"And you don't like that?"

"Of course not."

"So why do you put him down? Don't you think that hurts him too?"

"No, nothing hurts him. He knows right where his head's at, so nothing I can say affects him. Besides he has the whole world telling him how great he is; so what can my little zaps mean to him? Nothing, that's what. Besides, he doesn't even care about me anymore, not one way or the other."

"How do you know he doesn't care?"

"He never says anything nice to me. Oh, he's polite enough; but he never compliments me on how I look or anything I do; he never shows any signs of affection; he never tells me he loves me; he never gives me a little hug or a kiss. He's just Mr. Cool — the man who's so together, he's above all of us little folks."

★   ★   ★

"Hey, Norman Negative, are you thinking about splitting from

your old lady because you don't love her anymore?"

"No, that's not it; I still love her — of course, not like when we were first married. But I still love her a lot."

"Then, why don't you tell her so; why don't you act like it?"

"I don't have to tell her; she knows it. Anyone as sharp as she is can tell I love her. And I do act like I love her; I'm always polite and thoughtful. But if I did ever tell her she'd just say my taste was where the moon don't shine. Who needs it?"

WHY MANY MARRIAGES GET INTO TROUBLE

What's going on here? The fairly typical decay of a fairly typical marriage. This isn't what they had in mind when they got married, but this is what they've created by doing the wrong things and failing to do the right things. And what are some of the wrong things?

The **put-downs**: In our culture, put-downs are an easy way to get rewarding laughs. But they always end up getting out of hand, tearing relationships apart, even when we're sure everyone knows we're just kidding. **Rewarding the put-downs**: The couple made the wrong things more likely with their rewarding smiles and chuckles. They increased the likelihood of the very acts that were tearing them apart.

■ 1 What are two things people do that hurt their relationships?

FAILING TO DEAL WITH IT: PART 1

And what should they have done? They should have dealt with their problems from the very first. But instead they acted like most people — they avoided dealing with those problems. Why? **Because dealing with them might be a little aversive, and because admitting the problems might make them look weak.** Often people with high standards are afraid to admit that something bothers them — they can't admit that what they say to others about how cool they are doesn't match up with what they say to themselves, with how they feel.

And as their lives with each other become more aversive, they spend less and less time with each other. And as a result, they share fewer and fewer rewarding times together. So they stop being cues for reinforcement for each other. Instead, other people and other settings begin getting more of their time. So those other people and other settings become stronger cues for reinforcement. And they still don't **deal** with it. And their lives get more and more aversive until they make the last big escape response — they sell the house; he moves in with mother; she sets up a darling little studio apartment, just like she's always wanted.

- 2 What happens as relationships grow more and more aversive? What results from spending less and less time together?

WHAT ABOUT LOVE?

But they may still be in love, in the sense that they've learned rules that say, "if you live with someone for four years, you must love that person." And they may also still be in love in the sense that each has been paired with the other's rewards. So perhaps their saying they're still in love is saying that being with each other is a conditional reward; it would be rewarding if they could return (conditional on returning) to the first years of their marriage, before they had lost the high density of social and sexual rewards, and before they started giving each other so many social aversives. And if they had said they were no longer in love, that would mean their current relations were too high on aversives and too low on rewards. And now they didn't think they could ever get back to their early bliss (and even if they could get back, the pain and effort involved would be so great that they'd rather not try).

- 3 How can people be in love and still not get along?

FAILING TO DEAL WITH IT: PART 2

Back to the main point. They failed to deal with it. They failed from the very start. Like most people, they didn't assert enough. They refused to talk about problems; they were too submissive — they submitted until they couldn't put up with the problem any longer. And then they flew off the handle with aggression — put-downs and retorts. And they spent four years of marriage bouncing back and forth between passive suppression and aggressive outbursts, never asserting in a proper, problem-solving manner.

★   ★   ★

"You know when you're upset with him and start yelling and all, you know you're just hurting him; you're just upsetting him; you're just making matters worse. So you shouldn't do that."

"But I have to be honest with myself, don't I? If he makes me angry, it would be phony of me not to let him know it — not to let him know how angry I feel. And the only way I can truly express my inner feelings is by shouting at him."

PHONY MORALITY: THE RIGHT TO SELF-EXPRESSION

This sort of phony morality has caused much harm — this phony morality that you're honor bound "to express your true feelings," often in a manner that hurts someone else. This phony morality lets you hurt others and still avoid giving yourself guilt statements and guilt feelings about hurting them.

And some of this phony morality even seems to have crept into the work of people dealing with assertiveness training, though they know that uncontrolled aggression often harms more than it helps. So they suggest that we have a moral duty to "express our true feelings," but they suggest that we "express ourselves" in ways that will do the least harm. And they also suggest that our failure "to express these true feelings" will result in poor "mental health." But no data support this notion, even though people have been using that notion

for decades. They use it to justify acting in aggressive ways when they are in aversive situations — they use it to justify aggressive ways that produce reinforcement effects at the time though they will not produce reinforcement effects in the long run.

Now we're not saying it won't be aversive if you fail to state your "true feelings" (e.g., let people know how aversive their behavior is to you). If you're operating according to a rule that you are weak or not whole when you fail to "express yourself," then. failing to do that may be aversive, and you may make aversive statements to yourself about your weakness. We're also not saying that failure to express yourself produces any built-in aversive stimuli, that it produces an unlearned aversive condition. We're not saying that failing to express ourselves may be aversive, if it has been paired with other aversive stimuli — stimuli resulting from a phony morality.

But there is also one other way that failing "to express yourself" might be aversive. It might be aversive because it involves a loss of rewards — the built-in rewards you get when you aggress after you've received some other aversive stimuli. Now that's a little complex, so let's run through it in detail: someone does something that's aversive to you. So it will now be rewarding to aggress. And if you can't aggress, you're missing that aggression-produced reward. And missing the aggression-produced reward is a punishment procedure. And so there is also that added way that "failing to express ourselves" might be a punishment procedure — we lose the rewards of aggression.

But failure "to express ourselves" in an aggressive, aversive manner can also be a learned reward. For instance, you often find it very rewarding to suppress a response toward someone who is clearly baiting you, just trying to get you to aggress. If you restrain yourself, you've won that round. And you might find it rewarding to suppress your aggressive self-expression if the conditions are a clear cue that you will be much further ahead to do so, and if instead you deal with the problem in a more assertive manner. Those conditions might serve as a cue that more rewards will result from assertive acts rather than aggressive acts.

The act itself then might become a cue for a self-given reward — one you've earned because you've acted according to the rule, "**Don't**

But I have to be honest, don't I? I'd
be phony if I didn't express myself.
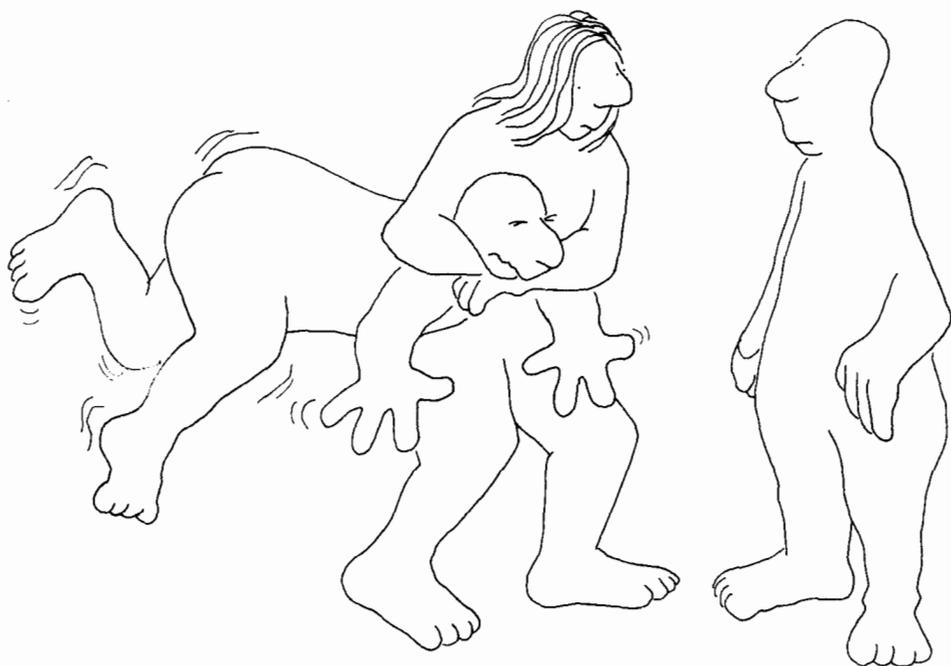
blow up — deal with it." (You may find it interesting that such self-given rewards often occur in the context of your putting down the way you used to act or the way other people act: "I didn't lose my cool; boy, I've really got it much more together than I used to. I was such an animal then — so immature — a child." Or, "I didn't lose my cool; boy, I've really got it much more together than others I know. All of them would have blown their tops rather than carry off an act of cool assertiveness like I just did.")

One final point: As you'll see in the next section, we're also not saying you shouldn't give people feedback about the effects of their actions on you. We're not saying you shouldn't specify what acts you find rewarding and what acts you find aversive. But we are saying you should do this in a negotiation session, in a planning session, not in a shouting match. And you should do it with great care so as to reduce, as much as you can, the aversiveness of your corrective feedback.

- 4 According to the authors, what results when we "express our true (aversive) feelings"?
- 5 Are there any data to support the notion that we'll end up with poor mental health if we "don't express ourselves"?
- 6 In what way may we find it rewarding **not** "to express ourselves" in an aversive manner?

USING BEHAVIOR MOD TO DEAL WITH IT

What's the solution to the troubles of Nellie and Norman Negative? Should they get a divorce as they're planning? Or can they solve their problems by using behavior mod? They could both escape a very aversive situation by getting a divorce. Of course, they'd have to go through some heavy aversive events along the way, since the process of getting a divorce and dividing the property almost always produces much aggression, making the pair resent each other. Also, getting a divorce often causes people to make many guilt statements to themselves, as most of us have been programmed to have strong rules

against divorce. But there is another way they could escape the im-mediate aversives of their marriage, while avoiding the aversives of divorce. They could solve their marriage problems with behavior mod. But can they? Yes, with a great deal of help, though.

Assert and Negotiate

They will need to learn and use high-level assertiveness skills. They will need to learn two basic sets of skills in order to solve their prob-lems in getting along with each other. They need to be able to ask each other to act in ways they find rewarding and not aversive; and they need to try to help each other with this. Easier said than done! They may need to go through special training procedures to learn these assertiveness skills. **They will need to learn how to negotiate.** They will need to learn how to talk with each other about aversive issues. They need a set of rules about how to conduct these negotia-tions. And they would do well to have a trained behavior modifier sitting in with them during their first negotiations, to provide feed-back as they further acquire those skills of negotiation.

- 7 What are two basic sets of skills people need to have in order to solve their problems in getting along with each other.

Point out Even the Little Aversives

Often people don't want to admit that some acts bother them — they don't want to seem petty. So they admit nothing, only to find their lives becoming more and more aversive. It helps to give such people a model who freely admits to finding such petty problems very aver-sive. The behavior modifiers can do this either by listing acts others have found aversive or by listing acts they themselves have found aversive, showing how they dealt with those problems — those aver-sive acts. Such admissions can act as a model — a cue for the imita-tion of actions previously suppressed by their punishment effects — a cue that such actions will no longer produce punishment effects; instead they will produce reinforcement effects — a cue that it's safe to admit petty gripes.

★   ★   ★

"Nellie, what are some of the acts you find aversive? It doesn't matter how small or petty they seem," Dr. Stein said.

"I can't think of any right now," Nellie replied.

"I'll tell you some things that Mr. Stein did that bugged me, until we dealt with them," Dr. Stein suggested. "For one thing, he was always very slow about washing the dishes. Sometimes it took him two or three days to get them washed."

"I see what you mean. Norman does things that drive me right up the wall. He leaves his smelly old cigars laying around; he litters the floor with his clothes; he doesn't put the records back in their covers when he's done with them; he plays the stereo too loud; and he's always playing that creepy old Reggae music. Is that the sort of thing you mean?"

"Yes that's it. Those are some of the little things that add up to make your life much more aversive than it need be."

- 8 Why are people sometimes reluctant to admit that some behaviors of others bother them?
- 9 How can a behavior modifier help people deal with the things that are bothering them?

Don't Be Emotional

Always describe the aversive acts in a neutral, nonemotional tone. Never dwell on past injuries. However, try to give people feedback about their past actions — feedback that will function to cue their future behavior.

As we've said, you don't tell others about their aversive acts so that you can "express your deep-seated resentment" of them or be aversive to them. They find it aversive enough to have you describe their actions as being aversive, without having you also suggest that they're some sort of low-life for acting that way. And besides not wanting to hurt them, you also want to avoid aversive corrective feedback because they may aggress against you in return.

■10 How should you describe aversive acts to another?
■11 What purpose does that description serve?
■12 Why do you want to keep the feedback as non-aversive as you can?

Don't Get into Spiraling Aggression

A strange process often takes place when you try to give neutral feedback — you fall into a one-person spiral of aversive statements — aggression. You start off with a fairly neutral statement of someone's actions that you don't like. But the mere description of that act is an aversive stimulus to you. And you find it rewarding to aggress when you make contact with an aversive stimulus (even if that stimulus is something you just said). So now you often will be more likely to aggress with a put-down of that person you're giving the feedback to. The put-down may imply that anyone who would act the way that person did must not care much about hurting others — about hurting you. But this statement is even more aversive to you, so you aggress even more, perhaps going into the details of the first aversive act, telling about the many offenses, how awful the other person is, and how much you've suffered.

And, of course, these statements are even more aversive to you — yet you keep on making stronger and stronger statements, statements that are more and more aversive. And each aversive statement causes you to make an even more aversive statement, even though the person (the victim) has done nothing but sit there quietly taking her medicine. The result is that you program yourself into a very aversive, emotional state even though the listener is not currently doing anything wrong. You just spiral out by yourself.

Of course, very few people will sit there soaking up all those aversive remarks without counter-aggressing. And those two-person spirals can move much further, much faster, as each person joins in the spiraling dance, escalating aggression and counter-aggression, often progressing to the point of tears, a stormy exit or a black eye. Let's look at an example:

"And what about you, Mr. Negative? What acts would you like to see Nellie change?" Dr. Stein asked.

"I'd like for her to stop being so negative," Norman replied.

"Well put," the therapist commented.

"Everything she says is a put-down," Norman went on, a little less cool this time. "The minute she gets home from the office, she starts putting down all those idiots she has to work with. And just when I'm trying to relax a little, she gets on my case 'cause I don't put things where she wants them in the kitchen. You don't know how bad it gets trying to live with all that."

"You think you've got it rough!" Nellie shouted. "I can't do anything to please you; you're all the time picking apart everything I do, and yet you don't seem to care when I do get something right! I've ..."

"Just a min . . ." Dr. Stein said, trying to break up the spiral.

But Norman had gotten control of center stage. "I pick things apart?! No one, and I mean **no one**, does anything right as far as you're concerned! Why, you even . . ."

"Just a minute now," Dr. Stein said, in there at last. "We're out of control. You've got to restrict yourselves to simply describing the acts you'd like to see and the acts you'd like not to see. Don't keep opening old wounds."

"But you have to lance those old wounds or they'll fester," Norman replied.

"No you don't. Let sleeping wounds lie, to mix a metaphor or two. Just do everything you can to make sure neither of you keep getting wounded," she said, reaching for her pad and pencil. "Now in a calm tone, in turn, each of you suggest some acts you'd like to see more of and some you'd like to see less of . . ."

- ■13 Describe the one-person spiral that sometimes occurs when that one person attempts to give neutral feedback.
- ■14 Describe the two-person spiral that often results from a failed attempt to give neutral feedback.

Recording Behavior

"Okay now, we've got a list from each of you of the behaviors you'd like to see, and those you'd like not to see. The next thing is to keep

track of the number of times each of the good responses occurs and the number of times each of the bad responses occurs. Each of you should make a chart with the acts listed down the left-hand edge and the days of the week listed along the top. Then either of you can record any instance of the behaviors for yourself or for the other person. You might keep the chart posted in your bathroom, or on your refrigerator, or wherever it's handy.

"And here's something else you might do. Be sure to record all aversive interactions with each other, or with anyone else. Note each time you zap someone, no matter how gentle, and no matter how deserving the zap may seem, and count it — mark it on your chart. And if someone else says it's a zap, record it even if you didn't mean for it to be. And record it even if you were just kidding — that's a big source of aversives for other people — those "just kidding" zaps.

"You should each record your own zaps. You can do that in many ways. For instance, I wear a response counter on my wrist, and then I push the little count button every time I goof up and zap someone. At the end of each day, I plot my number of zaps on my graph on our bathroom wall — behavioral graffiti.

"I think that self-recording is really helpful in tuning you into your behaviors. It causes your own acts to become cues for behavior that will help you control those acts."

■15 Why is self-recording helpful?

■16 Describe how you should record your interactions. When should you count an interaction as aversive — as a zap?

Behavior Contracting

"Are you sure this'll work?" Nellie asked.

"I'm sure it'll make things a lot better," Dr. Stein replied. "But you might need to add some extra rewards and aversives, if things don't improve as much as you'd like."

"How would we do that?" Norman asked.

"Well, here's what my husband and I did," she answered. "We went so far as to write out a behavior contract. We listed the things

we wanted each other to start doing and the things we wanted each other to stop doing. And then we listed the rewards we'd get for the good things and the penalities or aversives we'd get for the wrong things."

"For instance?"

"For instance, you might agree to do a chore for the other person as an aversive penalty if you goof up too many times — say five times in a day. And you might get a couple of extra dollars added to your allowance as a reward if you don't goof up too many times a day."

"We don't have allowances, and we can't afford extra money anyhow," Nellie said.

"Then you might indulge yourself in some other way as a reward — spend an evening talking to a friend, reading a book, eating your favorite meal — something you don't often allow yourself, but something you'll find very rewarding. People as intelligent as you will have no trouble coming up with some good rewards, if you really try."

∎17 What is the next step if recording doesn't cause interactions to go as well as you would like?

∎18 Describe that next step.

The Big Scene

"So do you guarantee we'll live happily ever after, after we've used all your fancy behavior mod techniques?" Norman asked.

"Of course not. No one lives happily ever after. My husband and I don't, and I doubt if you will either. But we're much happier than we used to be — and a lot less miserable as well. I'm sure you will be, too.

"But you've said, 'after you've used all these b mod techniques.' Well, there may be no 'after.' Most likely, you'll need to slowly add much of this into your total life. And then later, you'll be able to drop out much of it as your life gets better, yet you will always need to keep some things — things like unemotional feedback. But you'll stop thinking about it as behavior mod and start thinking that that's

just the way to do things. After a while, the whole thing begins to feel very good; after a while, b mod will fit you like an old glove."

CONCLUSIONS

You've seen how relationships fall apart, getting more and more aversive, when you neglect them, or when you're too timid to deal with them. And you've seen how you can use behavior mod to help you. You can learn to assert, to negotiate, to be unafraid to deal with those petty little gripes that keep building up, to give neutral-corrective feedback, to record the nature of your interactions, and even to do behavior contracting.

Once again, you've seen how to deal with it, how to have healthy, happy relationships with others. We're not talking about how to get along with just your husband or wife, not just your boyfriend or girl-friend, not just your roommate — we're talking about how to get along with anyone you'll be spending a fair amount of time with — we're talking about people you work with, people you play with, people you live with. If you're willing to deal with it, you can learn to get along with almost everyone.

chapter 18

humanistic behaviorism and phenomenology

Introduction

How Humanistic Behaviorism and Humanistic Phenomenology Differ
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  Perception: Behaviorism
  Self-Concept: Phenomenology
  Self-Concept, Verbal Behavior: Phenomenology
  Self-Concept, Verbal Behavior: Behaviorism
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INTRODUCTION

A "humanitarian" promotes human welfare and social reform. Will

all of you raise your hands if you think you're a humanitarian? A "humanist" promotes the betterment of humanity through the use of reason, while rejecting superstition. Will all of you raise your hands if you think you're a humanist? Few of us would fail to raise our hands. We all want to be humanitarians. And this is also true of a group of psychologists calling themselves humanistic psychologists. So, we've coined the expression, "humanistic behaviorism." To us, "humanistic behaviorism" means the use of behavioristic methods to reach humanistic goals — to promote human welfare and social reform.

But back to "humanistic psychologists." We need a more correct label, one that allows the rest of us psychologists to be humanists too. We'd therefore be happy to call them "humanistic phenomenologists" — if they'd call us "humanistic behaviorists." In this chapter, we'll describe humanistic phenomenology and compare and contrast it with humanistic behaviorism. We'll try to show that behaviorists can deal with all the issues of concern to phenomenologists. And we'll also try to show that behaviorists can do so without relying on invented causes. Furthermore, we'll suggest that the straightforward behavioristic approach allows us to deal with psychological problems in a better way. And while doing this analysis, we'll look at a few concepts crucial to the phenomenological approach: perception, self-concept, internal motivation, self-expression, creativity and the individual.

- 1 What does humanistic behaviorism mean?

HOW HUMANISTIC BEHAVIORISM
AND HUMANISTIC PHENOMENOLOGY DIFFER

Perception: Phenomenology

"Perception" is the key to phenomenology. The phenomenologists would say we act according to how we perceive the world. So if our actions seem wrong, they say, we must be perceiving the world wrong.

For instance, the eastern city-slicker swerves his car to miss a boulder — a boulder he perceives rolling across the Wyoming highway. His western cousin says, with a shocked expression, "You ran off the road to miss the tumbleweed!" To this instance the phenomenologist would say, "See how our perceptions control our actions. The city slicker perceived the tumbleweed as a boulder. And that perception caused the action of running off the road."

- **2** What is the relation between behavior and perceiving according to the phenomenologist?

Perception: Behaviorism

The phenomenologist's view seems like a reasonable, common sense analysis. Why would the behaviorist object? Well, as behaviorists, we believe that "perception" is an invented concept — something we can't observe, something invented to describe observable events. We argue that it's better to deal with observed causes and observed behavior — better to do that than to invent concepts to explain the behavior we do observe. We believe we can make more progress by looking at people's behavioral histories for the causes of their current behavior.

But, of course, that doesn't mean we always restrict ourselves to acts we can directly observe another person doing. As you've seen before, we also try to understand private acts, acts like people talking to themselves. But we assume that such private acts are the same as public acts, functioning under the same laws of behavior as describe public behavior.

But the phenomenologist's approach differs quite a bit from our approach. They invent concepts such as "perceptions" not as public acts that have become private, not as private acts that must function according to the same laws of behavior as public acts, in fact, not even as behavior. Instead, they treat the invented concept of "perceptions" as if it were a unique event. And the history of psychology seems to show us in the long run we've not had much success when we invent such concepts to account for our actions, especially since,

in the short run, those inventions may give us a false sense of having explained some psychological event, when we really haven't.

What about the city slicker? How do we explain his actions without perception? If he has only seen large, dangerous objects like boulders and garbage cans, then those stimuli might generalize to the fluffy tumbleweed he hasn't had experience with. And because of this stimulus generalization, the tumbleweed will control his driving acts in the same way a boulder or garbage can would. Note that we can observe stimulus generalization (a behavior process) without guessing about his "perceptions."

If we want to help him drive a little better out west, we can use "discrimination training" (a behavioral procedure). Then he won't respond the same way to the boulder and the tumbleweed. We can never deal directly with "perceptions," but we can deal with cues and behavior that we can observe.

Let's look at another case — an important test from the phenomenologist's point of view: the acid test. The phenomenologist brings a human subject to the lab, telling her that a jar sitting on the table is full of acid. He then asks the subject to stick her hand into that "dangerous" jar. Often, the subject won't do what he asks. So the phenomenologist would say she "perceives" that the jar actually contains acid. But if she will follow the instructions, it is because she "perceives" that the jar really contains only water. And the phenomenologist would conclude by saying, "See how our perceptions control our actions?"

So why would the behaviorist object? We suggest that the subject's behavioral history combines with the current cues to control her behavior. Suppose her acts produced aversives (punishment effects) in the past when she followed the request of authorities. Then because of the Law of Effect we might expect her not to place her hand in the fluid. But suppose under similar conditions her acts produced many "just-kidding" rewards. Then she might go along with the request. In either case we can understand, analyze and affect behavior by dealing with the person's behavioral history. And we can do so without calling on what we believe to be inventions of theory, like the concept of "perception."

According to behaviorists, phenomenological psychologists have gone astray, spending too much time inventing explanatory concepts and testing the "truth" of those invented concepts by trying to use them to predict actions they can observe. Behaviorists suggest that we should get on with the business of dealing directly with what people do, their behaviors. We shouldn't get bogged down with guesses about the nature of the mind. This doesn't mean, however, that behaviorists are not interested in physiological psychology, or the role of private events in a natural science, or trying to construct the person's behavioral history — they are.

- 3 What does the behaviorist say about the role of perception?
- 4 Cite two episodes phenomenologists would use in support of the need for the concept of "perception."
- 5 How might behaviorists analyze those episodes?

Self-Concept: Phenomenology

Let's see how the phenomenologist would deal with another problem — the problem of students who find themselves doing poorly in college. Phenomenological counselors are likely to tell these students that their problem is that they perceive themselves as poor students. If they will just change their perceptions of themselves, if they will just develop a better **self-concept**, then their problems will be over. The behaviorist would say this stress on students' "self-concept" has little impact on their grades, whereas procedures that deal directly with students' study behaviors do greatly improve their success in school.

- 6 How does the phenomenologist often deal with students doing poorly in school?

Self-Concept, Verbal Behavior: Phenomenology

The behaviorist believes that phenomenologists build their theories on a base of explanatory fictions — invented ways to explain why certain behaviors occur as they do. They think phenomenologists

tend to misplace their efforts. They deal with two classes of behavior: one, the student's verbal behavior (what they say about themselves); and the other, their study behavior. Behaviorists think phenomenologists invent the explanatory fiction of "self-concept" claiming it causes both classes of behavior. In other words, a phenomenologist would say that bad "self-concept" causes the students to speak poorly about their study behavior. They also would say bad "self-concept" causes them to be poor students. Such counselors consider the students' verbal behavior to be the window to their "self-concept." The counselors then try to treat the problem using their own verbal behavior (they talk to the student) to change the student's verbal behavior. The counselors try to get the students to say good things about themselves.

And what does it mean if the students say good things about themselves? According to the phenomenologist's theory, it means they now have good "self-concepts." And since the "self-concepts" are now good, then their study behavior will also be improved. Sadly, though, the students' study behavior often doesn't improve even though their verbal behavior does.

- 7 How does the phenomenologist relate self-concept, verbal behavior and other behavior?

Self-Concept, Verbal Behavior: Behaviorism

How do behaviorists deal with the relation between what people say about what they do and what they really do? We treat talking about something and doing it as two separate actions. Each action has its own cues, rewards and aversives. And each action can be unrelated to the other, depending on the person's behavioral history. But our nonverbal actions will often have more impact on what we say about those actions. And what we say about our nonverbal action will have less impact on those actions. We are more likely to describe ourselves as poor students if we really are poor students.

So behaviorists conclude that phenomenologists should spend more time on what students do and less time on what they say about

what they do — less time on their "self-concept." Behaviorists would say counselors should arrange their students' world so they really become good students. In other words, their study behaviors should produce rewards and avoid aversives, and behaviors that compete with studying should not produce rewards or avoid aversives. Then students will most likely come to describe themselves as good students, as their grades actually do improve, as they do study more.

But the radical behaviorist would agree that what we say can also affect what we do. Verbal behavior about ourselves might affect our other behavior in two ways: a) as a cue; b) as a reward or an aversive. We might cue action by statements about effects likely to follow. For instance, you might say to yourself, "If I study this chapter hard, then I'll shine in class; a crowd of cheering fellow students will then hoist me to their shoulders, carrying me to the Alpha Cholera frat house, where they will toast my skills as a humanistic behaviorist until the wee hours of the a.m." Then this statement may cue your study acts.

But let's look at an instance of verbal behavior cuing the restraint of other behavior. You might say to yourself, "If I study real hard, I'll shine in class and those other people, who call themselves students, will make cruel fun of me for being such a sit-in-the-front-row-and-answer-all-the-questions intellectual, smarty pants. Then the mob of jeering students will drag me down to some frat house where they'll force me to party until I've lost more than my desire to learn about humanistic behaviorism." Such a statement acts as a cue for the punishment procedure, making it less likely you'll keep on working hard.

But our verbal behavior about ourselves might also affect our other behavior by acting as a reward (or an aversive). So we might make our actions more likely when we follow them with rewarding statements about their quality. For instance, "My answers in class today were even more brilliant than the teacher's questions. No wonder my fellow students are clustering around me in the hallway — a humanistic behaviorist in my own time." Such a statement may act as a reward, making it more likely that you'll recite in the future.

But our verbal behavior can also suppress our other behavior by acting as an aversive. For instance, "My answers in class today were

My psychologist said I wasn't pulling the grades because I had a poor self-concept. My new psychologist says it's because I don't study!

even duller than the teacher's questions. I wonder why those rowdy students keep bumping into me in the hallway? It's almost like they're trying to knock me over the railing. Could that have been the teacher's idea?" Such a statement may act as an aversive, making it less likely that you'll recite in the future.

- 8 How does the behaviorist deal with the relation between self-concept, verbal behavior and other behavior?
- 9 Give an example of each of the two ways what we say affects what we do.

Internal and External Motivation: Phenomenology

Phenomenologists also deal with other notions the behaviorist would call internal, explanatory fictions. For instance, in the area of motivation, phenomenologists want to do away with added incentives (external motivation), to use only internal motivation. They want to help people perceive their "true needs," saying if people can perceive their true needs they will have internal motivation which will cause them to act to fulfill those needs. They say people will be much healthier if they fulfill their true needs. And people can only fulfill their true needs if they correctly perceive those true needs. The phenomenologists say those true needs include the need to be honest in our relations with others, the need to express ourselves in an open manner, and the need to release our emotions, rather than keeping them pent up.

So what can teachers do if they think students should study differential calculus? The phenomenologist would say they should get the students to perceive their true need for differential calculus. They would say the students would then automatically study their calculus.

- 10 How does the phenomenologist relate perception, needs and internal motivation?

Internal and External Motivation: Behaviorism

Most behaviorists agree it does help to clearly point out our goals and objectives. Often slight progress toward a distant goal is a mild, learned reward. So people do act in ways that move them a little closer to those distant goals. They will act that way if things are just right. The behaviorist agrees that students will study their differential calculus if things are just right. But rarely are things just right.

For instance, Juke sat down at his desk, stretched, opened his notebook to the page listing his calculus assignments, opened his calculus book to the proper page, got out a few sheets of lined paper, pulled out the stub of a No. 2 pencil, put it back, pulled out his black razor point, felt-tip pen instead, put back the pen and took out the pencil again, got up and walked over to the pencil sharpener where he shaved down the lead on his pencil to a needle point, sat back down to his desk, straightened the sheets of paper so they were all lined up exactly on top of each other, scanned his desk, frowned, straightened his notebook and text so they lined up with the edges of his desk, stood up and got a drink of water, came back wiping his mouth, sat back down again, tilted his chair back, stared at his calc book, leafed to the table of contents, turned back to the assignment page, read the page, got another drink of water, sat back down, picked up his pencil stub, worked through the first problem, checked the answer in the back of the book, and said, "It sure is a real kick to get those answers right. When I came here, I had trouble counting above 20 without borrowing someone else's fingers and toes, and now here I am in the middle of differential calculus. Heavy business. I am making progress."

Then he looked at the next problem on the page, picked up his pencil, started chewing on it, and then put it down when his phone rang. "Hello, Mae. You want to pick up on a cup of coffee? Great! See you at the union in five."

Students will study their differential calculus if things are just right. But, yes, indeed, things are rarely just right. Most often we need more than those little signs of progress as learned rewards to keep us moving, to keep us studying. So we often get more rapid

movement toward that goal when we add other external rewards. But, of course, we behaviorists say that all motivation is external in the final analysis. Even progress toward a goal is an external, or public, reward.

■11 What does the behaviorist say about the role of progress toward a goal and other added rewards?

Self-Expression: Phenomenology

The phenomenologist would say the real inner-self is good and pure. And problems with our actions are due to problems with our inner-selves, according to the phenomenologist. And if our inner-self has problems, if it is not healthy, it is because of unhealthy social and physical constraints, constraints from a sick society. Therefore, we must free our inner-selves from those sick social constraints so that those inner-selves can be healthy again. And our inner-selves can be healthy only by being free to express themselves. An inner-self that is free to express itself will be healthy, will be actualized — "self-actualization" being a major step of a healthy self.

■12 Why does the phenomenologist advocate self-expression?

Self-Expression: Behaviorism

Behaviorists would say that invented, inner causes have long been used to explain behavior — causes like the inner-self. Our culture has invented inner-demons for centuries. (People used to torture people to help them get rid of their inner-demons — people used to try to exorcise these inner-demons.) But behaviorists also say we no longer need to explain behavior by relying on inner causes, such as the inner-self. Why? Because behaviorists have become skilled at dealing with behavior in terms of outside (or external) causes. For instance, we shouldn't say that people aggress because they're "expressing their inner-selves," because we can now deal with aggressive acts in a more straightforward manner.

It is rewarding to aggress toward someone else when we've received an aversive stimulus. For instance, two rats in a cage will aggress toward each other, biting and clawing, if they are shocked with electricity. And many of us will swear at anyone in sight if we hit our thumb with a hammer. But it doesn't help us understand this aggression by saying that our inner-selves are expressing themselves. There are no data to support the notion that our inner-selves will be harmed if they don't express themselves through outward aggression; in fact, we have collected a good deal of data to the contrary — data showing that our relationships are harmed if we swear at our friends every time something aversive happens to us. Behaviorists would therefore say "the need of our inner-self to express itself" is an invented notion with little use. We should simply explain those events in terms of basic concepts derived from data we can see, saying simply that aversive stimulation makes aggression more rewarding.

Biology determines some features of our behavior, even though no inner-self is involved. Our biology determines that water is a strong unlearned reward. But the invention of an inner-self does not help us understand the unlearned reward of water. And our biology determines that aggression can also be a strong unlearned reward. But, again, the invented notion of an "inner-self that must be expressed" does not help us understand why aggression becomes an unlearned reward, when we've been aversively stimulated. Behaviorists argue that our behavior results from our behavioral histories, our biology and the current cues. We don't need the "expression of an inner-self" to explain this.

■13 What is the behaviorist position on self-expression?

Creativity: Phenomenology

The concept of "inner-self" also seems to affect the phenomenologists' approach to creativity. As we've said, they assume the "self" is basically good. They assume it causes all good things about the person. They also assume creativity is basically good. Therefore, they conclude that the "self" is basically creative. And so the "self" will

blossom forth in good, creative ways if the "self" can get free — free from all those unnatural constraints — constraints like structure, tests and grades — constraints imposed by teachers, for instance. And what happens, in fact, when you get rid of all those constraints? Let's see.

"Well," Phil Phenomenologist says, "it's the end of the term — all of you should have turned in your class projects. And I think I have them all now. But here's one I don't understand. Chet? All you turned in was a blank piece of yellow, notebook paper with your name scribbled across the top in brown Crayola. What does this mean?"

"Gee, Phil, you wanted us to do a paper about our true inner-selves, saying we should be free to express our true feelings. You said we shouldn't be constrained by the usual student-teacher relation-ships, so we could let our creativity blossom forth, and that this pro-ject should represent a sum total of the term's activities. So I started working at the project a few minutes before class, and this is what I think best expresses my true inner-feelings."

Dr. P. replied, "That wasn't what I had in mind, but if you're sure it represents a creative expression of your true inner-self, then I don't want to impose my values on it."

Dear reader, you shouldn't think that little story is all fiction. If you haven't seen it, you most likely will. It happens every year in al-most every college in the country.

■14 What must we do in order to achieve creativity according to the phenomenologists?

Creativity: Behaviorism

What do behaviorists mean by creativity? They mean original, appro-priate behavior. By original behavior we mean novel acts not under direct control of instructional or imitative cues. For instance, we would say the act of painting a picture might be original if that be-havior wasn't under the direct control of instructional cues (some-one saying what and how to paint) or imitative cues (another paint-

ing to be copied). And by appropriate behavior we mean acts that in-
crease rewards and decrease aversives in the long run, as well as in the
short run.

As a behaviorist, how could you produce creative acts — these
appropriate, original acts? Here's one way. First, you increase the
rate of original acts by having them produce reinforcement effects.
Then you select only those original acts that are also appropriate,
and we allow only those acts, those creative, appropriate acts, to pro-
duce reinforcement effects. In other words, we use shaping.

Our students start doing creative behavior analysis after: a) they've
mastered the concepts and much of the data of behavior analysis;
and b) they've received a good deal of feedback on a large number of
attempts at creative acts.

Here's how that might work. "We just saw our first example of
the reinforcement procedure," Bobby Behaviorist said. "We saw how
Ralph Rat would press a response lever more and more often in a re-
sponse test chamber because that response always produced water.
Now, Chet, will you give us a creative example of the use of the rein-
forcement procedure?"

"Sure, let's take Ralph out of the test chamber and put in his sis-
ter, Rhoda Rodent."

"That's an appropriate use of the concept, but I must give you a
little negative feedback on its originality. I'm afraid changing the rat
isn't enough."

On a more basic level, conceptual cue control is a crucial feature
of creative acts. And we also deal with conceptual stimulus control
from a behavioristic approach. First we find the crucial features of
the concept. Then we arrange for those features of the concepts to
acquire proper cue control over certain responses while making sure
features that aren't crucial don't control those responses.

■15 What must we do to get creativity according to the behaviorists?

The Individual: Phenomenology

Why do phenomenologists stress individuality so much? Our guess is

that the "rugged individual" is a cultural hero — Jesus Christ, Christopher Columbus, Joan of Arc — all persecuted as people and later glorified as legends. As history proves an individual's behavior good, we glorify the legend but not the individual. How often do we say, "There goes good old Dotty Different. She's not like us, doesn't think like us, doesn't dress like us. She's weird. So we really like her 'cause she's such an individual."?

Rarely. Instead we say, "There goes Dotty Different, what a pain-in-the-neck." Still our culture gives us approval when we talk about individuality as being good. And so phenomenologists verbally support individuality, as do many of the rest of us. But once again, what people say doesn't always match what they do.

Now according to the phenomenologist, the inner-self is good. So the phenomenologist says the inner-self must be individualistic, because individuality is also good. So your inner-self must differ greatly from mine, etc. And your unique inner-self must express itself to stay healthy and happy. Therefore we must not constrain the unique inner-self with any fixed curricula, nor with structured educational programs. The phenomenologist would say we need free schools, unstructured schools, places where each unique inner-self can do its own thing.

∎16 What does the phenomenologist say about the relation between the inner-self, individuality, self-expression and structured education?

The Individual: Behaviorism

But behaviorists might look at the individual in the following way: biological laws apply equally to us all. Those biological laws operate on slight environmental and genetic differences, with the result that we differ slightly in height, weight, color, etc. But we differ much less than we might because our individual worlds are so much the same — more or less the same climate, nutrition, activity level, etc.

And, in the same way, behavioral laws apply equally to all of us. And so we often differ only slightly in our behavioral or psychologi-

cal features. Why? Because we all share a very common culture. People may differ slightly among themselves simply because their subcultures differ. Our subcultures may make us differ because they determine some of our learned rewards. So some learned rewards differ greatly between 18-year-olds and their 60-year-old grandparents.

But the learned rewards are very much alike for most 18-year-olds, especially for each sub-subculture within the 18-year-old bracket. Ian Anderson, the flute player, singer and leader of the Jethro Tull band, says he can no longer stand the sight of a clear blue sky. It reminds him of the seas of blue denim that flood his vision every time he plays a rock concert for 3,000 18-year-olds expressing their 18-year-old individuality. We have a hard time arguing for much individuality for the 18-year-old students, just because they aren't like their grandparents.

And in many other ways, college students seem to be much more the same than different. They generally agree about which college topics they like, which college topics are clearly presented, which ones are interesting, etc. But there are also some subgroups that differ slightly. Why? Because their behavioral histories differ slightly. The art major and the business major may differ as to the reward of some topics. But they all like the topics of sex, dope, etc. And a small number of students find abstract, intellectual topics rewarding. But they also like sex, dope, etc.

And so we've used the following approach in designing our intro psych course at Western Michigan University. We choose those topics that most students agree are rewarding. But we also constantly revise some crucial topics — those crucial topics students don't find rewarding. We revise in an attempt to present the topics in a more rewarding way. And we're starting to deal with the special interests of some of the subgroups. We've developed specialized intro courses for business majors, for psych majors, for special ed majors, and for nursing majors. But I suspect we won't add much value by having more than five or six special intro courses.

Our approach contrasts with the phenomenologists' stress on multi-track curricula. At an extreme, they might require 1000 individual courses for 1000 individualistic inner-selves. They would re-

quire this to achieve greater expression and health for each of those inner-selves. But we find it hard enough to create one worthwhile course, let alone 1000. So we feel the students get the most out of one good course rather than 1000 poor ones. But we too go to multi-track programs as the need becomes clear, and as we are able to do a good job. An instance of that is our recent development of two under-grad psych majors, one in the experimental analysis of behavior and the other in behavior modification.

It may also be that the notion of individuality has too much influence even on us behaviorists. For instance, we now have personalized, or individualized, some of our courses so that students can take their quizzes whenever they want — that is, whenever the immediate rewards and aversives dictate — that is, at the very last moment.

My approach differs somewhat. How much students study is one of the major factors that affects how much they learn. So I try to create programs that increase the amount of time students study, doing this by reducing the bad effects caused by procrastinating. We divide our courses into one-hour, daily reading assignments, followed by daily quizzes. As a result, our students learn a lot, don't cram, and many even like our system.

But none of this implies that behaviorists want a conformist society — identical, interchangeable human modules, tumbling out of a cookie-cutter educational system. Far from it. Instead, behaviorists suggest that past attempts to increase individuality have failed. Why? Because they were based on the assumption that people only need to do one thing — free the inner-self to express its individuality. Instead, behaviorists recommend methods that shape and support creative acts, methods much harder to achieve than the current hands-off approach to teaching. Yet the result of shaping and supporting should be a much more true individuality.

■17 What do behaviorists say about the extent to which we differ and the extent to which we are the same?

■18 How might they deal with individual differences in education?

■19 What do the behaviorists say might account for past failures to encourage individuality, and how might they correct this?

CONCLUSIONS

We've tried to show why humanistic psychology is more aptly called humanistic phenomenology — then others of us can be humanists too, without being phenomenologists — it leaves us on an equal footing as humanistic behaviorists. Both the phenomenologist and the behaviorist approach attempt to help humanity. But I think phenomenology would do better if it did not stress the concepts of "perception" and "inner-self," for these are invented concepts used to explain behaviors. These concepts have also resulted in other invented explanations — "self-concept," "internal motivation," "self-expression," a poor analysis of creativity, and a misplaced emphasis on individuality. On the other hand, behaviorists can deal with all of the data and issues of concern to the phenomenologist, but deal with these issues in a much more straightforward and effective way. Why? Because they rely on behavior and the proven principles to govern it.

Nonetheless, we recognize that phenomenologists develop some effective methods: their phenomenological theory isn't their only guide for their actions. Instead, feedback from methods that work and don't work also guide them as they develop and revise their methods. Still, the behaviorists seem to be more rapidly developing worthwhile methods of working with people, perhaps because they aren't burdened with invented, explanatory concepts.

FINAL NOTE: ENGINEERING, NOT SCIENCE

Behavioristic research might not always produce worthwhile results. And the programs behaviorists design might not always produce worthwhile results. But whether or not we design worthwhile behavioral systems is a question of our skill as engineers, not a question of science. There are no crucial experiments that will prove or disprove behaviorism. Behaviorism is a general approach, a philosophy of science, a systematic approach — not a theory capable of disproof. We will keep on using behaviorism as long as using it produces rewards. Let's hope most of those rewards come from our increased ability to help and understand human beings.

ENRICHMENT

How Humanistic Behaviorism
and Humanistic Phenomenology Are Alike

Behaviorism and phenomenology differ greatly, but they also have many common features.

Whom Are We Serving? The phenomenologist asks, not without some suspicion, "Whose needs are being served when the teacher assigns a certain text, the students' needs or the teacher's need?" The behaviorist asks a similar question: "What rewards and aversives are controlling the teacher's act of assigning that text? Is the teacher assigning a text that he or she finds rewarding, though the students find it neither rewarding nor instructive? Is the teacher assigning an old text simply because he or she is avoiding the work of preparing for a new but better text? Is the teacher assigning a new text simply because he or she no longer finds the old, but more effective, text rewarding? Or, is the teacher assigning that text as a result of a careful analysis of what the students will need to learn and how they can best learn it?" We are fortunate that at least some teachers can answer yes to the last question, at least some of the time.

■20 What general issue do both the phenomenologist and the behaviorist raise concerning whom teachers are serving?

The Here-and-Now. The phenomenologist stresses the here-and-now of education — immediate experience. And along the same line, the behaviorist stresses immediate behavioral effects. The behaviorist says educational systems must have many immediate behavioral effects to keep students involved. We use this approach at Western Michigan University by having our students do the rewarding work of helping people with problems, but we make sure the work relates to what they study. And we make sure what they study will help them with their work. This makes their studies more rewarding and their work more effective. The result is that our students also get quite involved — dedicated to helping people.

■21 In what ways do both theories agree on the here-and-now?
■22 How might a behavioristic teacher deal with the here-and-now?

Worthwhile Education. Both behaviorists and phenomenologists stress the notion that what their students learn should be "worthwhile" — it should help them deal more effectively with their world. Both behaviorists and phenomenologists seem to stress this more than other educators often do.

■23 What do phenomenologists and behaviorists mean by "worthwhile" education?

Feedback. Both behaviorists and phenomenologists make a good deal of use of feedback from their students in designing educational learning systems — books, courses, programs.

Positive Relationships. Both the behaviorist and the phenomenologsit try to build positive relationships between teachers and their students. In that way there will be enough rewards to more readily keep them all involved with each other.

Methods Becoming More Alike. Most likely, the humanists' and behaviorists' methods will become more and more alike. They will come together because the world they are working with is the same for both groups, and so that world will provide much the same rewards, aversives and feedback for the methods both groups use. They will both discard methods that don't work, while adding methods that do work.

But this doesn't mean that either group will discard its theoretical position. Both theories are very general, and the people in both groups are very clever at showing how any method that works really comes from their own theories. So our theories may remain much the same, though we may all adopt new methods. Old theories never die — their methods just fade away.

■24 What is happening to the relationship between the theories and the relationship between the methods of the two approaches?

chapter 19

ethical issues in behavior modification:

flattery vs. reinforcement based on praise

INTRODUCTION

To sneak or not to sneak, that is the question. I can sneak into the kitchen and finish off the Oreos while she's still on the phone. Or, I can wait and share them. My rewards conflict with hers. Our interests conflict, our concerns conflict, and that's an ethical problem.

Ethical issues seem to arise when we would benefit from our doing one thing, but others would benefit from our doing something else. And who those "others" are can vary greatly. We can be concerned about what's best for the person we're dealing with, or other people whom that person is affecting, or still other people not involved at present — perhaps not even yet born. For instance, we might be working with juvenile delinquents. And we might try to modify their acts so they will be better off, or so the immediate victims will be better off, or so our society, present and future, will be better off. And this raises yet another area of conflict of interests —

the interests of the juvenile delinquent, the interests of the immediate victims and the interests of society.

Let's look at this in terms of another case — the factory owner who pollutes the land. Suppose we are to help modify the behavior of the polluter. Now it might not help the owner to pay for those costly pollution controls, and it might not help the customers, since they will have to pay the cost of the anti-pollution methods. But it might help their grandchildren if we can modify the polluters' behavior, so as to prevent the pollution harming their environment. This, therefore, suggests the following guideline: for ethical actions we should do those things that will produce the most rewards and the least aversives for the most people — people now and in the future.

Of course, it's hard to be certain about the impact of our actions now, let alone in the future. Still we can most likely improve the ethical value of our actions if we try to follow that guideline. But we must be ready to take an unpopular stand once in a while, because what might be best for others might not be best for the person we're dealing with. And what might be best for generations to come might not be best for us now. We might need to get by with less, so there will be enough for others later. But people here now may use aversive control to try to suppress our ethical attempts to look out for other people who will be here in the future. So it's very hard to act in an ethical manner. Why? Because the immediate results almost always program acts that aren't ethical.

But, it helps to have the support of a strong subculture — a subculture of people who will approve of our ethical acts and who will disapprove of our unethical acts. It also helps to have strong stimulus control over our actions by ethical rules. And it helps to have effective self-punishment when we break those rules. Then our actions may resist all of the programming that tends to guide them along unethical lines — along lines that will not result in the greatest rewards and the least aversives for all. In the following sections, we'll look at an ethical analysis of an issue crucial to behavior mod; let's look at the common use of praise in behavior mod and compare and contrast it with the common use of flattery elsewhere.

PRAISE IN BEHAVIOR MOD VS. FLATTERY

People often object to the use of praise in reinforcement procedures because they think such praise is the same as flattery, and they feel that flattery is unethical. We suggest that you use praise in behavior mod because we think it differs greatly from flattery. We agree, however, that flattery is most often unethical.

So let's look at four ways in which proper praise often differs from flattery and at ways in which they are the same. We'll then examine those issues in terms of our ethical guideline — the most rewards and the least aversives for all. Let's look, for instance, at praise and flattery in terms of Marie's attempt to get rid of Jim's sexist acts (chapter 11).

How They Differ: Praise in Behavior Mod vs. Flattery

Just how do the two differ — praise in a reinforcement procedure and flattery? They seem to differ in at least four ways:

1. The goal of the behavior modifier vs. that of the flatterer.
2. The relation between the behavior and praise.
3. The need to be honest.
4. The one who benefits from the changes in the person's actions.

Let's look at each of these in more detail:

1. In a reinforcement procedure, the goal is to increase the frequency of some action. But with flattery, the immediate goal is most often to increase the extent to which the person finds the flatterer rewarding (likes him) — to increase the learned reward value of the flatterer by pairing that person with the rewarding praise. Marie was using a reinforcement procedure, since she was trying to increase the frequency of an action, since she was trying to get Jim to treat Sally as an equal more often. She was not using flattery, since she was not trying to trick Jim into finding her more rewarding.
2. In behavior mod, praise must follow the act to be increased, if the approval is to make that act more likely. But with flat-

tery, praise need not follow a specific act, since the immediate goal is simply to make the flatterer more rewarding. The flatterer may not care about raising the frequency of any specific act at that stage. Marie was using a reinforcement procedure, since she had to follow Jim's nonsexist acts with praise to make those nonsexist acts more likely. She was not using flattery. She would have been if her praise didn't have to follow his nonsexist acts — if from time to time she had said, "Jim, you're the most handsome man this side of the movies. I don't know what it is, but you combine the best features of Robert Redford, Burt Reynolds and Paul Newman."

3. Praise must be correct — it must be honest — you must give it for a response you really do approve of if it's to work as a well-placed reward in a behavior mod procedure. If the praise is poorly placed, you may make some response more likely, though you don't really approve of it. But praise need not be correct or honest if all you're trying to do is flatter someone into liking you more — to find you more rewarding. So Marie had to make sure that she really did approve of some of the ways Jim was treating Sally, before she praised his actions. But what if she had been flattering to increase her reward value instead? Then she wouldn't have had to be honest — she wouldn't have had to really approve of his looks before comparing him to Hollywood's big three.

4. Most often behavior mod is used to help the person whose behavior is being modified or changed. But most often this is not the case with flattery; instead, flattery is often used to help the user with little concern for whether it helps the other person. For instance, we often use behavior mod to help children learn useful acts they might not acquire otherwise — acts like reading and writing. And we use behavior mod with retarded people to help them acquire useful acts they could not get without help — for instance, acts like bathing and dressing. In all these cases people acquire acts that will help them. But those who use flattery may do so only to increase their reward value for others, so that those

others will be more likely to do what they request. Used car salespersons and seducers often use flattery so that we will buy a car or a relationship from them, just because we like them, even though the car or the relationship may not be the best for us. In fact, I just bought a used Edsel from a salesperson who was quite impressed with my knowledge of cars.

- 1 Describe the four ways in which praise in behavior mod differs from flattery.

How Can You Find Behavior You Can Honestly Praise?

The issue of the honesty of praise raises a big problem. Many people would rather give a pint of blood than a little praise. They refuse to praise unless the performance is perfect, and nothing ever is. Why are they so stingy with their praise? Why won't they praise something that's less than perfect? They fear that such praise will cause the other person to plod along at the same low level, never rising to perfection. So instead they hang on to their precious praise until the person just stops trying and the behavior mod project fails.

Most of us make this mistake when we first start working with behavior mod — we forget about shaping. What we should do is praise each sign of improvement. And if there is no improvement? You should praise the person's attempt to improve. And you needn't fear that praise will lose its value due to overuse; you can tell the person the feature of the performance you're praising. For instance, you can say, "I like the way you're working on getting better, and I'm sure you're going to start getting better, if you just hang in a little longer." Or you can say, "I really like the way you're starting to get better. If you keep getting better at that rate, it'll be no time before you're perfect." In both cases, you're giving honest, correct and rewarding praise even though the act you're working on still is not perfect. And in neither case are you using flattery.

- 2 What common error do people make when trying to use praise?
- 3 How can you use praise when the person still needs to greatly improve?

Some Exceptions to the Analysis

We've tried to show how praise in behavior mod differs from flattery, but two areas do overlap in some ways. On the one hand, we don't always use behavior mod to help the person whose acts we're changing. And on the other hand, we sometimes do try to increase our reward value for a person before we can help that person. Let's look at these two issues in more detail.

Changing People's Behavior without Helping Them. We must take great care that the acts we shape in others really help them and not just us. We must worry about this even more when we hold a position of power, when we are responsible for others. We must worry about this whether we're a teacher in a classroom, or an attendant on a ward of retarded children. Often we tend to try to shape up acts that are obedient, quiet and nontroublesome. But sometimes that's all right because such acts often help the person involved as well. For instance, children will often learn more if they're sitting quietly at their desks rather than running around the classroom disturbing others. But as behavior modifiers we should not always assume that what's good for us is good for those whose actions we're changing. We must be sure that we're not just making our own lives more rewarding.

But sometimes we may want to help someone change his actions, even though the change won't help that person. Let's look at Marie and Jim in that respect. Jim may not get much out of changing his actions toward Sally. Though he should feel a little better about himself if he sees that his actions are now more in line with the sorts of acts he approves of. But Marie started her behavior mod project with Jim's acts to help Sally, not Jim. Yet this would seem to be an ethical use of behavior even though Jim will not benefit much. Why is it ethical? For two reasons:

1. It's ethical because Jim won't lose much — just a personal servant in the office, while Sally will gain a large amount — the chance to become a more professional person. Also, society may gain a woman who can now contribute more nearly to her full potential.

2. It's ethical because Jim was wrong to treat Sally as he had —
    keeping her from making a greater contribution to society. So
    Marie was using behavior modification for ethical reasons,
    even though Jim would not get much from the change in his
    own actions.

So sometimes it may be ethical to use social approval in a reinforce-
ment procedure even though the person may not greatly benefit from
having his or her behavior changed.

- 4 Cite two cases where a behavior modifier might change people's
  behavior without helping them — one case where it might be
  unethical and one case where it might be ethical.
- 5 Give two reasons why it might sometimes be ethical to change
  someone's actions, even though they wouldn't benefit.

Increasing the Reward Value of the Behavior Modifier. We some-
times need to set ourselves up as a rewarding person for others; we
need to get them to like us before we can help them. And the proce-
dures we use may be somewhat like flattery. Suppose for instance,
you want to help a juvenile delinquent, but you don't have power or
authority with regard to that person. Then you might do better if the
person liked you. So first you could set yourself up as a source of re-
warding praise. In that way, the person would come to like you. But
also you might want your praise to be honest, so you could also set
up long-term trust. So setting yourself up as a rewarding person is
like flattery in two ways:

1. It's an attempt to get someone to like you.
2. The praise need not result from any specific response.

But this procedure should also differ from flattery in two ways:

1. It should be honest.
2. It should be done to help the other person.

This is a useful technique — one many new behavior modifiers
fail to use. You will be more likely to succeed in working with peo-

ple if they like you. So first set yourself up as a rewarding person, and then start your main project.

- 6 Why does it sometimes help if a behavior modifier sets herself up as a rewarding person?
- 7 How does this differ from flattery?

THE ETHICS OF PRAISE IN BEHAVIOR MOD VS. FLATTERY

How does our analysis relate to the big picture — to ethics? Behavior mod is usually ethical in the most immediate sense — we usually help the other person with our behavior mod. While flattery is usually unethical — the users often don't help the other person with their flattery.

And what about the fact that praise must be honest? That may help other people and the future generations as well. Honesty may help society get along better, making it more likely that everyone has a chance to consider how someone else's action will affect their own well-being. But flattery need not be honest. So it may hurt the value of honesty, thereby harming present and future generations.

What about the need for praise to follow a specific act when using reinforcement but not when using flattery? By itself that wouldn't seem to have any impact on ethical issues, as it's not clear how that alone would affect the well-being of others.

And what about the immediate goals for reinforcement vs. those for flattery? The immediate goal for reinforcement is to increase the frequency of some specific act. That is usually ethical, since the act usually helps the other person. But the immediate goal of flattery is simply to increase reward value of the flatterer. And that in its own right may be somewhat dishonest. Flatterers imply that they are just giving feedback, when, in fact, the long-range goal is to control the person's actions.

As a final issue, what about using praise to set yourself up as a rewarding person, before you start a formal behavior mod project? Most often this too will be ethical, since you usually do it to help the

other person, or other people, present and future. It is also ethical to the extent that you are honest. So most often the use of approval in behavior mod seems ethical, while, often, the use of flattery does not seem ethical. But as behavior modifiers, we should worry more about the broader ethical issues (the impact of our behavior mod projects on other people — present and future) and not just the person we're working with.

- 8 Evaluate the proper use of praise in behavior mod and the use of flattery in terms of the four features of ethics that we've discussed.

CONCLUSIONS

We've looked at some basic concepts of ethics, and we've applied those concepts to an analysis of a common ethical problem — one we often meet in behavior modification — how praise in reinforcement relates to flattery in everyday use. We've suggested that such praise and flattery differ in four ways:

Praise in a Reinforcement Procedure	Flattery
The first goal is to increase the occurrence of a specific act.	The first goal is to increase the reward value of the flatterer.
The praise must follow the act being praised.	The praise may be independent of any specific act.
The praise must be honest.	The praise need not be honest.
Most often the praise benefits the person whose behavior is changing.	The praise need not benefit the person being flattered.

But there are exceptions:

1. People can misuse praise in a reinforcement procedure where it might even hurt the people to change their behavior.

2. We can properly use praise in a reinforcement procedure even though it won't help the person whose behavior we're changing.
3. We can set ourselves up as a rewarding person in an effort to help others change their behavior.

Our main point is that we feel the proper use of praise differs greatly from flattery. So as a result, we feel you should use praise in reinforcement procedures; and as a result, you can then help others change their behavior in worthwhile ways.

Flattery is often unethical, because people often use it without regard for how it affects others. Praise in behavior mod, on the other hand, is most often ethical because we use it to help others. And we will be even more ethical as we use praise to increase the rewards and decrease the aversives for the most people — people now and in the future. Still we must always watch out that we don't fall into the unethical use of such a powerful procedure.

ENRICHMENT

Goals: A Radical-Behavioristic Analysis

In this chapter we talked about "goals" — the goal of the users of reinforcement and the immediate goal of those who flatter. But what is a goal? Is it something in the future? Yes, it's something that may result from our actions. Then does the goal affect our actions? No, not if we are to avoid teleology, not if we're to avoid saying that events that haven't even happened yet can affect events that are happening now.

Then why should behavior analysts talk about "goals" if they can't affect our actions? To be precise, we usually shouldn't; instead, we should talk about "goal statements" — rules that specify **goals** that will result from our actions. The rule states the setting or occasion, the response and the results of the response — the goal. And that rule statement functions as a cue, a cue that tends to cause the person to act in a manner that will produce the goal.

Now let's apply this notion of goal statement to the procedures

of reinforcement and flattery. What do we mean when we talk about the goal of people using reinforcement — saying their goal is to make a response more likely. We mean that the behavior modifier's behavior is under the stimulus control of a rule — a rule that states that under the present conditions, the person should use the reinforcement procedure since it will achieve the goal — an increase in the likelihood of the response.

Now it's true that reaching the goal is rewarding for the behavior modifier; it's true that getting the increased likelihood of the response is rewarding. But it's not true that reaching the goal acts as the reward for the behavior modifier's use of that reinforcement procedure. Why not? Why doesn't achieving the goal act as a reward to make the behavior modifier more likely to use reinforcement in the future? Because achieving the goal is too greatly delayed from the behavior modifier's act of using the reinforcement procedure. So that goal won't act as a reward to control the behavior modifier's act of using the reinforcement procedure.

Then what is that rule-statement a cue for? It usually cues self-given rewards or aversives, perhaps like this: reinforcement — if you follow the rule and use the behavior modification procedure, then you can call yourself a good behavior modifier — you don't have to wait around until the person's behavior changes before you pick up your reward. Avoidance — but if you don't follow the rule, then you must call yourself a bad behavior modifier. So, rules that state distant goals control our actions by acting as cues for self-given rewards and aversives. And that's the planned use of behavior mod.

But rule control often drifts into intuitive control, as the cues for the setting come to cue the immediate built-in rewards and aversives, as the cues of the setting replace the cues of the rules. And then we have cue, response, **immediate** reward. Could behavior mod come under intuitive control? Probably not. We would need some other reward in the case of behavior mod, since the built-in, unlearned reward is so delayed. But if there were to be some other reward, what might it be? A built-in, learned reward — what we sometimes call "feelings" — in this case the stimuli that have been paired with the self-given rewards when you properly used the reinforcement procedure in the past.

Those immediate "feeling" stimuli result from the proper use of reinforcement, and those stimuli are paired with the self-given rewards. So those stimuli themselves become learned rewards. And now simply making proper use of the reinforcement procedure almost becomes its own reward — it produces built-in learned rewards. But we suspect this is very rare. We don't see much evidence of it happening. And we suspect it might be fairly hard to set up such built-in, learned rewards in this case. It's hard enough to get use of the reinforcement procedure to come under good rule control, let alone good intuitive control. So we suspect that most, if not all, behavior mod is under rule control, not intuitive control.

Then what about flattery? Most often flattery also seems to be under the control of rules, as are behavior mod procedures. Such a rule states that at certain times, the response of flattery will achieve a goal — the goal of getting someone to do as requested — buy an Edsel for instance. And again the rule control seems most likely since the delay between the flattery and the goal is often too great for the achievement of the goal to act as a reward — a reward that will directly make subsequent flattery more likely.

But sometimes that delay may be much less than in the case of the reinforcement procedure used by the behavior modifier. For instance, the flatterer may pay someone a compliment and then right afterwards request something. In such cases, the delay may not be too great. Then people may acquire some acts of flattery under intuitive control with no clearly stated goals. In that case, it would not be appropriate to say that the goal of flattery is to increase the flatterer's reward value. In that case we should simply say that flattery is a procedure, the first stage of which involves the increase in reward value of the flatterer. We substitute the word "stage" for "goal."

And intuitive control may cause another sort of behavior much like flattery — praising even though praise isn't earned. This can differ from flattery in that the fact that it increases the reward value of the person is not crucial to the process. How could this happen? The act of praising might be controlled by the immediate effect it has on the recipient of that praise. For instance, the recipient might smile or say thank you. And the recipient's rewarding reaction might make further

unearned praise more likely. But again we think this may be even less common than the intuitive use of flattery we've just discussed; we simply don't see it occurring that often.

In summary, our analysis suggests the following conclusions:

1. Goals don't affect our actions, but goal statements do. A goal statement is a rule that states the act, the occasion for the act and the results of that act (the goal).
2. So goal statements function as cues for the use of both reinforcement and flattery.
3. And the use of both reinforcement and flattery are most likely under rule control rather than intuitive control.
4. However, some flattery may come under intuitive control as a result of those times when the act was quickly followed by a request that produced rewarding compliance.

But again, the main points are that acts such as the use of reinforcement or flattery are most often under rule control, not intuitive control.

- ■ 9 Do goals affect our actions? If so, how?
- ■10 Do goal statements affect our actions? If so, how?
- ■11 What roles do rule control and intuitive control play in behavior mod and in flattery?

chapter 20
proper usage of the basic terminology of behavior analysis

INTRODUCTION

In this book, you've had a good deal of exposure to the basic terms and laws we use in behavior analysis. Now we'll review those terms and laws. We'll also explain why we've selected those we've included in this text, some of which we've created to fill what we felt were gaps in the field. In many instances, we'll cite sample sentences, showing you how you should use the terms — and how you should not.

CHAPTER ONE: REWARDS AND AVERSIVE STIMULI

1. **The Law of Effect**: the effects of our actions determine whether we will repeat them.

This is the most basic of all behavior principles.

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2. **Rewarding stimulus:** a stimulus we tend to maximize contact with.

Our use of the term "reward" or "rewarding stimulus" is roughly the same as the more standard, "positive reinforcer." We prefer not to use the standard term, "reinforcer," because it's defined by a procedure, the reinforcement procedure based on rewards (traditionally called the "positive reinforcement" procedure). The problem with this definition is that it seems to be based on the assumption that any specific "positive reinforcer" will work equally well in all three basic procedures: the reinforcement procedure based on rewards, the punishment procedure based on the loss of rewards, and the avoidance procedure based on preventing the loss of a reward. In other words, the assumption seems to be that the same rewarding stimulus or "positive reinforcer" can increase acts that present it or avoid its loss, and that it can decrease acts that cause it to be removed. We agree that the same stimulus can work in all of these procedures, but it may not.

Generally, we'll speak of a reward, rather than a rewarding stimulus, simply because it's more convenient. Remember a reward can be a thing, like a smile or money, or it can be an event, like a change in temperature.

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3. **Aversive stimulus:** a stimulus we tend to minimize contact with.

We often shorten this term to "aversive." An aversive is roughly equivalent to the more standard "negative reinforcer" or "punisher" (punishing stimulus). Again, we prefer **not** to use the more standard

terms because they are defined by a procedure, the punishment pro-
cedure or the negative reinforcement procedure (a reinforcement
procedure where an act removes an aversive). And this definition also
involves a questionable assumption: the assumption that this stimu-
lus will work equally well in either the punishment procedure based
on the presentation of aversives, the reinforcement procedure based
on the removal of an aversive, or the avoidance procedure based on
preventing the presentation of an aversive. We think it's possible for
an aversive stimulus to work in one or more of these procedures, but
not **necessarily** in all of them.

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4. **Unlearned rewards or aversives:** rewarding or aversive stimuli
   that have their effects because of the inherited biological struc-
   ture of the creature.

Such unlearned rewards include stimuli like food, water, sexual
contact and life-supporting temperatures. Unlearned aversives include
stimuli like electric shock and extreme hot and cold temperatures.

* * *

5. **Learned rewards or aversives:** rewarding or aversive stimuli that
   have their effects because of their pairing with other rewarding or
   aversive stimuli.

Such rewards and aversives can be social, built-in, added or self-
given. Learned rewards must occasionally be backed up with other
rewards and aversives, learned or unlearned, if they are to retain their
power to make acts more or less likely.

* * *

6. **Social rewards and aversives:** learned rewarding and aversive
   stimuli involving the behavior of other people. These stimuli ac-
   quired their power because they were paired with people control-
   ling other rewards or aversive stimuli.

* * *

7. **Conditional rewards and aversives:** a learned stimulus that is re-warding in one setting and aversive in another, or weak in one setting and strong in another.

Be careful not to confuse the concepts of conditional rewards and aversives with the concept of stimulus discrimination. Conditional rewards and aversives refer to a stimulus that is a reward in one setting and an aversive in another, or is weak in one setting and strong in another. With stimulus discrimination we behave one way in one setting and another way in another setting because of cues in those settings. So with conditional rewards and aversives, we're looking at the stimuli that **follow** certain acts (rewards and aversives), whereas with stimulus discrimination we're looking at the stimuli (cues) that precede acts. The two concepts, however, usually work together be-cause cues paired with the conditional rewards and aversives in a given setting will come to control the actions.

★   ★   ★

8. **Natural response class:** a group of responses that react together because they are physically similar.

When a response produces a reward, that response becomes more likely, but so do all other responses that are physically similar to it. The members of the response class also all become less likely when one member produces an aversive.

The most confusion with this term comes because many don't understand that **learned** responses belong to natural response classes. The issue is not whether responses are learned, but that rewarding and aversive stimuli make all responses that are physically similar more likely when one produces a reward or aversive. If speaking out in class produces the teacher's rewarding attention then we'll speak out again, perhaps using different tones of voice, different degrees of loudness and so on. All of those tones and volumes were made more likely when speaking out produced a reward. They belong to an un-learned response class of physically similar ways of speaking out in class, a learned act.

★ ★ ★

9. **Arbitrary response class:** a group of responses that react together because they produced similar rewards in the past.

The entire response class becomes more likely or less likely depending on whether a member of that class has produced a reward or an aversive. Members of a learned response class generally don't look or sound alike — they belong to the same response class by the similarity of the results they produce. For instance, a learned response class may be "ways to get a door open," and members of it may include kicking it open with your foot, turning the knob with your hand and pushing it open, pushing it open with your shoulder and so on. These responses aren't alike in form but they all produce the same reward — an open door.

- 1 Define and correctly use the following law and terms:
     The Law of Effect
     Rewarding stimulus
     Aversive stimulus
     Unlearned rewards and aversives
     Learned rewards and aversives
     Social rewards and aversives
     Conditional rewards and aversives
     Natural response class
     Arbitrary response class

CHAPTER TWO: BASIC BEHAVIORAL PROCEDURES — REINFORCEMENT, PUNISHMENT AND AVOIDANCE

10. **Behavioral contingency-relationship:** a causal relation between a response and a reward or aversive.

Formally, psychologists have talked about contingency-relationships in much the same way we do in this book, calling them "contingencies." However, casual use of this term tends to get sloppy. For

instance, we've heard "contingencies of reinforcement" used inter-changeably with "reinforcement procedures." But a behavioral contingency-relationship is not a procedure. It is simply a relationship between a response and a reward or aversive. A procedure includes the response, the contingency-relationship and the following reward or aversive.

Here we talk in terms of presenting, removing and preventing contingency-relationships. Both presenting and removing contingency-relationships can make behavior more likely, depending on the stim-ulus presented or removed. Prevention contingency-relationships can only make acts more likely, either when an aversive is presented or a loss of reward is prevented.

Sample sentence: We decrease the likelihood of behavior with a presentation contingency, where a response produces an aversive.

Sample sentence (misuse): The behavior was made more likely through a reinforcement contingency.

(In this sentence we should substitute the term "reinforcement procedure" for "reinforcement contingency," or we should say, "a presentation contingency where a response presents a reward." Or we might say, "a removal contingency where a response removes an aver-sive, "because this is also a reinforcement procedure. We do not talk about "contingencies of reinforcement," as do most of our colleagues for three reasons:

1. "Reinforcement contingency" stresses the reinforcement pro-cedures according to Skinner's general implication that those operations are superior in causing behavior change compared to punishment operations (as if they weren't equal). Recent data, however, indicate that these two procedures are of equal importance.

2. "Reinforcement contingency" is harder to teach than "pre-senting," "removing" and "preventing," which makes every-thing correctly seem push-pull.

3. As we said before, people often use "contingencies of rein-forcement," the more traditional term, incorrectly, as when they mean to cite a behavioral procedure or the occurrence of stimulus control.

Sample sentence (misuse): His misbehavior **produced** a removal contingency-relationship, based on rewards.

(We should say his behavior produced the removal of a reward, and the whole episode illustrates a removal contingency-relationship, based on rewards.)

Sample sentence (misuse): He went to the opera instead of the play because there were stronger reinforcement contingencies involved with going to the opera.

(We should never imply that current contingency relationships cause us to do something. Current stimuli evoke actions, i.e., stimulus control, not future stimuli — see term No. 18, "Teleology.")

★   ★   ★

11. **Behavioral effect:** the combination of a behavioral contingency relationship with a reward or aversive.

The behavioral effect is the result of the response.

Sample sentence: The reinforcement procedure involves either of two behavioral effects, the presentation of a reward or the removal of an aversive.

Sample sentence: The first behavioral effect is the combination of the presentation contingency with a reward, while the second behavioral effect is the combination of the removal contingency with an aversive.

★   ★   ★

12. **Reinforcement procedure:** a behavioral effect that increases the likelihood of behavior, either through the contingent presentation of a reward or the contingent removal of an aversive.

We use a reinforcement procedure to make behavior more likely. But we do not say behavior is "reinforced" or that "a reinforcement contingency is in effect." We do not talk about "reinforcers" as do many behaviorists. Instead, we say a response produces reinforcement

effects; that is, a response is followed by the presentation of a reward or the removal of an aversive.

Sample sentence: Behavior is made more likely through a reinforcement procedure.

Sample sentence (misuse): The response was reinforced.

Sample sentence: The response produced a reward, illustrating a reinforcement procedure.

Sample sentence (misuse): A reinforcement contingency was in effect.

Sample sentence: The response removed an aversive, illustrating a reinforcement procedure.

Sample sentence (misuse): The response produced a reinforcer.

In a reinforcement procedure, responses produce rewards or remove aversives. We don't use the terms "positive and negative reinforcement" for three reasons:

1. Those terms are based on the terms "positive and negative reinforcer" — concepts we feel are best covered with "reward and aversive."
2. We feel that the traditional use of the term "reinforcement" tends to mean only positive reinforcement, whereas there are two basic reinforcement procedures, one based on the removal of aversives ("negative reinforcement") as well as one based on the presentation of rewards ("positive reinforcement").
3. We've seen the concept of negative reinforcement confuse many students in behavior analysis — so we wish to avoid it. Negative reinforcement is a procedure where the removal of a negative reinforcer (aversive) makes an act more likely. (The negative reinforcement procedure is equivalent to our reinforcement procedure, based on the removal of aversives.) We guess that the confusion comes from the traditional emphasis on the positive reinforcement procedure, so that reinforcer sounds like it should mean "bad-good," rather than its cor-

tect use — a stimulus that decreases behavior when it's presented and increases behavior when it's removed.

* * *

13. Reinforcement process: an increase in the likelihood of behavior resulting from a reinforcement procedure.

The reinforcement process is caused by the reinforcement procedure. It is a change in the likelihood of a response (an increase) that comes after a response has produced a reward or removed an aversive. We introduce the term reinforcement process in this book because it's logically separate from its corresponding procedure; a response changes in likelihood (process) because it was involved in a procedure. However, we don't talk too much about "processes" per se — instead we describe the changes in behavior that occur as a function of procedures. For instance, we say "the response became more likely after it was involved in a reinforcement procedure," as opposed to "the response underwent the reinforcement process after it was involved with the reinforcement procedure."

Sample sentence: The response became more likely after it was involved in the reinforcement procedure — the reinforcement process.

Sample sentence: We saw the response occur more and more often — the reinforcement process — after it had produced a few rewards (or removed a few aversives).

Sample sentence (misuse): The reinforcement process occurs where a response produces a reward or removes an aversive.

(This sentence illustrates the reinforcement procedure, not process. The reinforcement process is the increase in likelihood of a response that produced a reward or removed an aversive.)

* * *

14. Punishment procedure: a behavioral effect that decreases the likelihood of behavior, either through the contingent presentation of an aversive or the removal of a reward.

We do not say "a punishment contingency is in effect." We do not talk about "punishers." Instead we say that a response produces punishment effects; a response is followed by the removal of a reward or the presentation of an aversive.

Sample sentence: Behavior is made less likely through a punishment procedure.

Sample sentence: In a punishment procedure, a response either produces a reward or removes an aversive.

Sample sentence (misuse): A punishment contingency was in effect.

(There is no such thing as a punishment contingency in this book, just presenting, removing and preventing contingencies.)

Sample sentence (misuse): The response produced a punisher.

(In this book, a response produces an aversive stimulus, not a punisher.)

Sample sentence (misuse): The response was weakened by punishment.

(In this book, a response is weakened by a punishment procedure.)

★   ★   ★

15. **Punishment process:** the decrease in likelihood of behavior resulting from the punishment procedure.

The punishment process is caused by a punishment procedure. It is a change in the likelihood of a response (a decrease) that comes after a response produces an aversive or removes a reward. Again, we introduce the term process because it's logically separate from the procedure, though we don't use the term much in the book.

Sample sentence: We saw the response become less likely after it was involved in a punishment procedure — an illustration of the punishment process.

Sample sentence (misuse): The punishment process is where a response produces an aversive or removes a reward.

(This sentence illustrates the punishment procedure, not process.

The punishment process is the decrease in likelihood of a response producing an aversive or removing a reward.)

*   *   *

16. Avoidance procedure: a behavioral effect that increases the likelihood of behavior through the prevention of some event, either the prevention of the presentation of an aversive or the prevention of the removal of a reward.

Often, behaviorists don't talk about avoidance as being a separate procedure; instead they treat avoidance procedures as a type of reinforcement procedure, based on the removal or reduction of aversives. However, we think that it often helps to separate the two procedures with reinforcement being a more basic procedure and avoidance being a second-order procedure.

Sample sentence: An avoidance procedure takes place when a response prevents the removal of a reward or the presentation of an aversive.

Sample sentence (misuse): An avoidance contingency-relationship was in effect.

(We don't have **avoidance** contingency-relationships only preventing contingency-relationships, where a response prevents some event, either the occurrence of an aversive or the removal of a reward.)

*   *   *

17. Avoidance process: the increase in likelihood of behavior resulting from the avoidance procedure.

The avoidance process is caused by the avoidance procedure. It is a change in likelihood of a response (an increase) that comes after a response has prevented the loss of a reward or prevented the presentation of an aversive.

Sample sentence: We saw the response occur more and more often — the avoidance process — after it had been involved in the avoidance procedure.

Sample sentence (misuse): The avoidance process occurs when a response prevents the loss of a reward or the presentation of an aversive.

(This last sentence illustrates the avoidance procedure, not process. The avoidance process is an increase in likelihood of a response after it has prevented the loss of a reward or presentation of an aversive.)

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18. Teleology: the doctrine that future events can affect present effects.

Example of a teleological statement: He is going to the concert because it will be rewarding.

(How can a concert be a reward before he goes? It can't because future events can't cause current actions. Going to other concerts in the past might have produced rewards, making it likely he'll go to this one. Or other current cues might cause him to go, like advice from a friend.)

Example of a teleological statement: He is going to the concert instead of the movie because the reinforcement effects are stronger for going to the concert.

(Behavioral effects can't occur before the response does, because behavioral effects are made up of the response, the contingency-relationship, and the following reward or aversive. So behavioral effects can't cause going to concerts, though past behavioral effects for going to concerts can increase the likelihood of going to other concerts.

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19. Purposivism: the doctrine that events have purposes causing them to occur.

A purposive statement: He went because we wanted to go.
(Strictly speaking, we don't go places because we "want" to go,

but because cues paired with past behavioral effects are controlling our behavior. Of course, the above sentence may be acceptable when speaking casually.)

A **purposive statement:** She acted like a clown to get attention.

(Again, speaking strictly, she couldn't act like a clown "to get" attention, because attention becomes a **purpose** for her actions. What we should say is that **in the past** when she acted like a clown, her acts produced attention, so those past effects are now influencing her current acts. Or we could say that cues paired with certain past acts and their effects are now controlling her behavior of acting like a clown.)

- 2 Define and correctly use the following terms:
    Behavioral contingency-relationship
    Reinforcement procedure
    Reinforcement process
    Punishment procedure
    Punishment process
    Avoidance procedure
    Avoidance process
    Teleology
    Purposivism

CHAPTER THREE: STOPPING BEHAVIORAL PROCEDURES

20. Stopping behavioral procedures: the withholding of the usual effects for an act causing the likelihood of the act to change.

This is a term we coined. "Extinction" is a roughly equivalent term in general use, though extinction usually refers only to withholding a reward that once followed an act (the stopping of a reinforcement procedure based on rewards). But any of the six basic behavioral procedures can stop, thus, the new term.

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21. Stopping a reinforcement procedure (extinction): an operation

that decreases the likelihood of an act, either through stopping the normal presentation of a reward or by stopping the normal removal of an aversive.

Again, we use this terminology to show that all kinds of procedures can stop, not just the "positive reinforcement procedure" (the reinforcement procedure based on the presentation of rewards). Also we use it to stress that the change in the act's likelihood comes from a change in the procedure that suppressed or maintained it. We realize that this terminology may seem awkward at first, especially if you're used to using "extinction."

Sample sentence: When an act no longer produces its usual reward, we say the reinforcement procedure has stopped or that an extinction procedure is in effect.

Sample sentence: To stop a reinforcement procedure, withhold the reward that normally follows an act or withhold the removal of an aversive that normally follows an act.

★　★　★

22. **Stopping a punishment procedure:** an operation that increases the likelihood of an act, either through stopping the normal presentation of an aversive or by stopping the normal removal of a reward.

Acts increase in likelihood when the punishment procedure suppressing them stops — unless the punishment procedure completely suppressed the act before it stopped.

Sample sentence: The punishment stopped when the response usually followed by the shock no longer produced the shock.

Sample sentence: When a punishment procedure stops, an act that produced an aversive no longer does so, or an act that removed a reward no longer does so.

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23. **Stopping an avoidance procedure:** an operation that decreases

the likelihood of an act, either through stopping the normal pre-vention of an aversive or by stopping the normal prevention of a loss of a reward.

As with the stopping of reinforcement procedures, acts decrease in likelihood when the avoidance procedures maintaining them stop.

Sample sentence: The avoidance procedure stopped when the rat's lever-press no longer prevented the electric shock.

Sample sentence: We can stop an avoidance procedure by mak-ing sure a response that once prevented an aversive no longer does so or by making sure a response that once prevented the loss of a re-ward no longer does so.

* * *

24. Intermittent effects: effects that only follow an act sometimes.

Most behaviorists spend a good deal of time talking about "sched-ules of reinforcement," the patterning of effects in relation to acts. Differing patternings of effects produce different, but often regular, patterns of behavior. And different patterns of behavior occur de-pending on whether a certain **number** of responses must occur before one produces an effect, or a certain **time** period must pass before a response produces an effect. We've tried to cover those aspects of schedules that will be applicable to beginning b-mod students (inter-mittent vs. continuous effects, intermittent effects and their relation to extinction and the fading programs).

Sample sentence: Calling a busy person produces intermittent ef-fects because you can't get a hold of her each time you call.

* * *

25. Consistent effects: effects that follow an act almost every time it occurs.

Most of our actions produce consistent effects.

Sample sentence: Getting a drink from the drinking fountain usu-

ally produces consistent effects, since we get water each time we turn the handle.

★   ★   ★

26. Loss of behavioral control by a learned aversive: a stimulus that once served as an aversive loses its power to decrease the likelihood of acts since it is no longer paired with other aversives.

This term differs from the stopping of a punishment procedure based on the presentation of aversives, but their outcomes are the same — both stop suppressing responses. When a punishment procedure based on aversives stops, the aversive that once suppressed a response no longer follows the response, but it would still work as an aversive if it were used again. When a learned aversive loses behavioral control, the aversive that once suppressed an act still occurs, but the aversive no longer suppresses the act because the aversive hasn't been paired with other aversives.

★   ★   ★

27. Loss of behavioral control by a learned reward: a stimulus that once served as a reward loses its power to increase the likelihood of acts since it is no longer paired with other rewards.

This term differs from extinction based on the presentation of rewards, but their outcomes are the same — both decrease the likelihood of responses. When a reinforcement procedure based on rewards stops, a response that once produced a reward no longer does so. When a learned reward loses behavioral control, the reward that once made an act more likely still occurs, but it no longer increases the likelihood of the act it follows, since it's no longer paired with rewards.

★   ★   ★

28. Behavioral chain: a series of acts that must be completed in a certain order before a final effect can occur.

You may shorten this term to "chain" used as a verb — "chaining." Another acceptable name for a behavioral chain is a "stimulus-response chain."

<p style="text-align:center">★   ★   ★</p>

29. Behavioral history: a summation of the kinds of behavioral effects an act has produced, the closeness of those effects to the acts, and the size, or magnitude, of those effects.

Many behaviorists talk about "histories of reinforcement" a rough equivalent to our "behavioral history," though our term, again, doesn't restrict itself to only reinforcement procedures and processes.

- 3 Define and correctly use the following terms:
     Stopping behavioral procedures
     Stopping a reinforcement procedure (extinction)
     Stopping a punishment procedure
     Stopping an avoidance procedure
     Intermittent effects
     Consistent effects
     Loss of behavioral control by a learned aversive
     Loss of behavioral control by a learned reward
     Behavioral chain
     Behavioral history

CHAPTER FIVE: STIMULUS CONTROL — DISCRIMINATION AND GENERALIZATION

30. Cue: a stimulus that is paired with a behavioral procedure. Therefore, that cue usually controls the rate and occurrence (or non-occurrence) of an act.

We use "cue" as a noun ("reinforcement cue") and as a verb (the red stoplight "cued" his act of putting on the brakes). Many behaviorists don't use the term "cue," but instead use "discriminative stim-

ulus," abbreviated "S^D." A problem with the term is that it's used mainly with regard to reinforcement procedures and processes. But a cue can be paired with any behavioral procedure or the stopping of any behavioral procedure. Also, in general use, a discriminative stimulus causes responding, but we feel it's important to stress that a cue can suppress responding if it has been paired with a punishment procedure.

Sample sentence: The doorbell cued her act of opening the door (used as a verb).

Sample sentence: The doorbell is a cue, and opening the door in its presence has produced reinforcement and avoidance effects.

*   *   *

31. Avoidance cue: a stimulus that is paired with an avoidance procedure.

Generally, the term "cue" will suffice, rather than also stating what procedure the cue has been associated with in the past.

Sample sentence: His mother's letter was a cue that caused him to call her, an act that had avoided getting a stern lecture in the past.

*   *   *

32. Extinction cue: a stimulus paired with an extinction procedure.

In the past, the term S$^\Delta$ (S-delta) has been used. This term is usually used in contrast to the traditional S^D, or discriminative stimulus (see reinforcement cue), so we wish to make a break with S$^\Delta$, since both S^D and S$^\Delta$ usually refer to reinforcement procedures based on the presentation of rewards, whereas reinforcement procedures can also be based on the removal of aversives — and cues can be paired with the stopping of either of those behavioral procedures.

Sample sentence: Ever since John broke the volume knob on my stereo, turning the knob has become an extinction cue, because it won't turn the volume down when the stereo is on too loud.

*   *   *

33. Reinforcement cue: a stimulus paired with a reinforcement procedure.

The traditional term, "discriminative stimulus" (or "S^D"), is roughly the same as our "reinforcement cue," though the traditional terms usually refer only to reinforcement procedures based on the presentation of rewards, whereas reinforcement procedures can also be based on the removal of aversives. As we said before, we often feel comfortable using just the term "cue," without specifying the procedure it's paired with.

Sample sentence: Seeing your name on the return address of a letter is a reinforcement cue, causing me to rip open the envelope more quickly than usual to see what news you have.

★   ★   ★

34. Punishment cue: a stimulus paired with a punishment procedure.

A punishment cue can be paired with the presentation of aversives or the removal of rewards, either of the punishment procedures.

Sample sentence: When he and his brother were fighting, his mother entered, a punishment cue since she generally sent them to their rooms.

★   ★   ★

35. Internal cue: a stimulus whose energy source is inside the body.

Internal cues can range from something you say to yourself to an ache in your foot. They can be reinforcement, punishment or avoidance cues.

Sample sentence: The internal cue was her aching head, and it controlled her act of going to the cupboard for aspirin.

★   ★   ★

36. External cue: a stimulus whose energy source is outside the body.

External cues can be reinforcement, punishment or avoidance cues.

Sample sentence: The stoplight was an external avoidance cue, controlling her act of putting on the brakes.

* * *

37. Stimulus generalization: responding in much the same way when similar stimuli are present.

It's not correct to say "a person makes a generalization" — that's a mentalistic statement, something we try to avoid. Stimulus control generalizes, people don't.

Sample sentence: The child's behavior of saying "doggie" generalized to all four-legged animals.

Sample sentence (misuse): The child generalized between dogs and all other four-legged animals. (Remember, stimulus control, not people, generalizes.)

* * *

38. Stimulus discrimination: responding in the presence of some stimuli while not responding in the presence of other stimuli.

It's not correct to say a person "makes a discrimination." Behaviors, not people, come under discriminative control.

Sample sentence: The child's act of calling a dog "doggie" and a cat "kitty" is an instance of stimulus discrimination between two types of small, furry, four-legged animals.

Sample sentence: The child's behavior was under proper discriminative control of "hot" and "cold."

Sample sentence (misuse): He could discriminate between "right" and "wrong." (Remember, behavior is under discriminative control, people aren't.)

* * *

39. Discrimination training procedure: a cue for one behavioral procedure alternates with a cue for another behavioral procedure. Usually the second stimulus is a cue for stopping the first behavioral procedure.

The goal of this procedure is to stop stimulus generalization from occurring and bring about stimulus discrimination. In other words, you want two somewhat similar cues to control two different responses.

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40. The Law of Stimulus Generalization: the more similar two stimuli are to each other, the greater the stimulus generalization between those stimuli.

The converse of this law is also true: the more dissimilar two stimuli are from each other, the less stimulus generalization is likely to occur between them.

- 4 Define and correctly use the following terms and law:
   Cue
   Avoidance cue
   Extinction cue
   Reinforcement cue
   Punishment cue
   Internal cue
   External cue
   Stimulus generalization
   Stimulus discrimination
   Discrimination training procedure
   The Law of Stimulus Generalization

CHAPTER SIX: STIMULUS CONTROL — VERBAL BEHAVIOR

41. Rules: statements that describe (a) the setting, or occasion, or cues, (b) the response, and (c) the effects of that response.

Rules are verbal cues. They can be paired with any of the basic procedures or the stopping of those procedures. Rules don't necessarily control acts, but when they do we say "rule control" is occurring.

★   ★   ★

42. Rule control: the control of acts by rules.

★   ★   ★

43. Intuitive control: the control of acts by the rewards and aversives that normally follow those acts, rather than by rules.

Unlike rule control and feedback control, the preceding cues for intuitively controlled acts aren't always verbal. They are cues directly paired with the effects acts have produced. We use the term "intuitive" because acts under the control of cues paired with their direct effects seem very "smooth," "practiced," or "natural." But remember, intuition doesn't control these acts; cues and effects do. Skinner often calls such acts "contingency-controlled" or "contingency-shaped."

★   ★   ★

44. Feedback statement: a statement about the form of a previous act that points out the correct or incorrect features of that act.

A feedback statement may or may not control the act it describes, and if it does then we say the act is under "feedback statement control."

Sample sentence: I told him I liked his performance, a feedback statement.

Sample sentence: After I said I liked his performance, he repeated it, so I think his acts had come under control of my feedback statement.

★   ★   ★

45. Feedback statement control: the stimulus control of the form of acts by feedback statements.

Remember, a feedback statement may not result in feedback statement control.

★   ★   ★

46. Positive feedback statements: feedback statements that tend to maintain acts or make them more likely.

Positive feedback statements are cues that may or may not exert feedback statement control, but they maintain acts or make them more likely when they do.

★   ★   ★

47. Corrective feedback statements: feedback statements that tend to change acts or make them less likely.

Corrective feedback statements are cues that may or may not exert feedback statement control, but they tend to change acts when they do. Corrective feedback is often called negative feedback.

■ 5 Define and correctly use the following terms:
 Rules
 Rule control
 Intuitive control
 Feedback statement
 Feedback statement control
 Positive feedback statements
 Corrective feedback statements

CHAPTER SEVEN: STIMULUS CONTROL - IMITATION

48. Built-in rewards and aversives: rewards and aversives that automatically follow acts.

The built-in reward of washing your hands is clean hands; the built-in aversive of touching a hot pan is a burned finger.

★   ★   ★

49. Added rewards and aversives: rewards and aversives that have an arbitrary relation to the acts that produce them.

Added rewards and aversives are either social rewards and aversives or material rewards and aversives dispensed by people. Added rewards and aversives can also be self-given.

<div align="center">★   ★   ★</div>

50. Imitative cue control: a type of cue control in which the form of the response matches the form of the cue.

When we imitate others, our actions are under imitative cue control, meaning others' acts are cues for acts that look or sound like theirs.

<div align="center">★   ★   ★</div>

51. Self-given rewards and aversives: rewards and aversives we provide following our own acts.

Self-given rewards and aversives probably need to be occasionally paired with other rewards and aversives if they are to retain their power to make acts more or less likely.

- 6 Define and correctly use the following terms:
    Built-in rewards and aversives
    Added rewards and aversives
    Imitative cue control
    Self-given rewards and aversives

CHAPTER EIGHT: RULE-CONTROLLED BEHAVIOR

52. Principle of Immediacy: only those behavioral effects that closely follow acts can influence their likelihood.

In other words, delayed effects can't directly increase or decrease

the likelihood of acts that produced them. But the likelihood of those acts **can** change if the effects cue rules and feedback statements from others or ourselves, which may later control the acts that caused them.

★   ★   ★

53. Guilt statements: self-given aversives for acts that have produced or would produce punishment effects from others.

Guilt statements can affect acts in two ways — as aversive stimuli that weaken the acts they follow or as cues that cause us to act in ways that will stop our having to make guilt statements.

★   ★   ★

54. Guilt control: the stimulus control of acts by guilt statements.

Our acts come under guilt control when we escape or avoid giving ourselves guilt statements by acting in ways that won't cause us to make such statements. Our acts also come under guilt control when guilt statements serve as aversives, decreasing the acts that produced them.

★   ★   ★

55. Self-control procedures: procedures we engage in that are likely to control our own acts.

Self-control procedures can include a wide variety of things we do, like giving ourselves verbal cues, rewards or aversives, and setting up cues that will control our acts at a later time — for instance, marking our calendars to remind us of future appointments. Self-control procedures can also involve help we enlist from other persons to control our acts, like when we arrange for wake-up calls or have others hold our rewarding possessions and give them back to us only when we behave in agreed upon ways.

■ 7 Define and correctly use the following terms:

Principle of Immediacy
Guilt statements
Guilt control
Self-control procedures

CONCLUSIONS

In this chapter we reviewed all the basic terms and laws of behavior analysis from the first eight chapters of the text. We discussed why we selected the terms we did, how you should use them — and how you should **not** use them. A thorough mastery of these concepts will help you do advanced analyses of complex psychological processes, as these concepts seem to be basic to understanding such complex processes. For them to be tools you can actively use, you must be able to recognize and generate instances and non-instances of those concepts. Being able to define the concepts and recognize instances often go hand-in-hand.

Here is a list of terms you should now be able to correctly use, listed under the chapters we introduced them in:

Chapter One
The Law of Effect
Rewarding stimulus
Aversive stimulus
Unlearned rewards and aversives
Learned rewards and aversives
Social rewards and aversives
Conditional rewards and aversives
Natural response class
Arbitrary response class

Chapter Two
Behavioral contingency-relationship
Behavioral effect
Reinforcement procedure
Reinforcement process

Punishment procedure
Punishment process
Avoidance procedure
Avoidance process
Teleology
Purposivism

Chapter Three
Stopping behavioral procedures
Stopping a reinforcement procedure
Stopping a punishment procedure
Stopping an avoidance procedure
Intermittent effects
Consistent effects
Loss of behavioral control by a learned aversive
Loss of behavioral control by a learned reward
Behavioral chain
Behavioral history

Chapter Five
Cue
Avoidance cue
Extinction cue
Reinforcement cue
Punishment cue
Internal cue
External cue
Stimulus generalization
Stimulus discrimination
Discrimination training procedure
The Law of Stimulus Generalization

Chapter Six
Rules
Rule control
Intuitive control
Feedback statement
Feedback statement control

Positive feedback statements
Corrective feedback statements

Chapter Seven
Built-in rewards and aversives
Added rewards and aversives
Imitative cue control
Self-given rewards and aversives

Chapter Eight
Principle of Immediacy
Guilt statements
Guilt control
Self-control procedures

ENRICHMENT

Behavior Analysis Project 1

You need to spend a fair amount of time analyzing your world in terms of the concepts of behavior analysis in order to master those concepts at a level where you'll be able to use them. After such an analysis, you should get feedback from your teacher or another student as to his or her opinion of your analyses.

For this project, you can draw your examples from many settings — your school or job, your home, apartment or dorm and your social life. Use examples from any of these settings for your analyses. But scan the entire assignment before you begin working on the first part. Be sure to write out your analyses in enough detail so that anyone can understand what you're describing and decide whether they agree with those analyses.

1. Describe an instance of behavior involving an unlearned reward.
    a. What setting are you going to deal with? (For example, "I'll select my home.")

    b. What behavior? (In order to answer the questions for this assignment you must already have selected the results you're going to analyze. But most often, in doing a behavior analysis, you'll select some behavior first. Only then will you find out what rewards or aversives cause that behavior to occur or keep it from occurring.)

        In this example, I'll select the behavior of opening the refrigerator door — the source of so much unlearned reward in my home. Since I've selected that one, you should be original enough to come up with something else when you write up this project.

    c. What is the unlearned reward? (In this case, I doubt if the light turning on as the refrigerator door opens is the reward, because no matter how fast I open the door, I never manage to catch the light sleeping on the job. So you shouldn't have too much trouble swallowing the notion that the food in the fridge acts as my reward.)

    d. And what does this reward or aversive do to the behavior — increase or decrease its likelihood? (In my case, the food increases the frequency of opening the door.)

2. Now do the same thing for a learned reward. However, select one that is neither a social reward nor a reward based mainly on control.

    a. Setting? (I'll try the work setting this time.)

    b. Behavior? (Counting the number of words I've written.)

    c. The learned reward? (Seeing that I've written my quota of words or even exceeded it seems to be fairly rewarding to me; it not only rewards my counting the words, but it also rewards my writing the words in the first place. Of course, seeing that I've only written a small number of words acts as a learned aversive also, as does seeing poorly written words.)

3. Now work through a case involving a learned social reward.

    a. Situation?

    b. Behavior?

    c. Learned social reward?

    d. Effect on behavior — increase or decrease the likelihood of the act?

4. Go through the four steps, A-D, for a learned reward based on control. Be sure to label each step — A, B, C and D.
5. Now an unlearned aversive.
6. A learned aversive other than a social reward or one based on control.
7. A learned social aversive.
8. A learned aversive based on control, or lack of control in this case.
9. Now describe a case where the reward or aversive affects an unlearned response class.
   a. Situation? (I'll select the dinner table at home.)
   b. Behavior? (Eating a pizza.)
   c. Reward or aversive? (The hot pizza burns my mouth — aversive stimulus).
   d. Effect on behavior? (The aversive stimulus, the hot pizza, decreases the likelihood of the response. I don't put more hot pizza in my mouth.)

       Why does the act of putting the pizza in my mouth make a response class? Because there are all sorts of ways I can put it in my mouth. I can hold the pizza many ways, including using my left hand or both hands, as well as my right. In fact, almost all instances of results affecting behavior involve some sort of response class; and for most human beings, the response class may be both a learned and an unlearned response class. In this case, I could also put the pizza into my mouth with my fork — clearly an instance of a learned response class, since there is little physical sameness between picking up a piece of pizza with my hands and a fork.

10. Go through the four steps, A through D, with a learned response class.
   a. Situation? (Teacher's office after a weekly psych quiz.)
   b. Behavior? (A student complaining about the way her quiz was graded.)

    c. Reward or aversive? (The teacher agrees with the student and changes the grade — a reward.)

    d. Effect on behavior? (The response class may well be increased to the point where the student will come in with a complaint every week, whether or not the complaint makes sense.)

    OR,

    c. Reward or aversive? (The teacher disagrees with the student and suggests that the student has even less knowledge than the poor score on the quiz might show — an aversive.)

    d. Effect? (The learned response class may be decreased to the point where the student will not come to the teacher's office even when the complaint is clearly correct.)

11. Now cite an example of a conditional reward or aversive where it is aversive in one situation and rewarding in another.

12. Cite an example of a conditional reward where the value of the reward increases from one situation to another.

13. And, finally, look at some behavior of yours that you might find a little curious, like early morning walks, and suggest some rewards or aversives that might be involved.

The examples that you come up with should be original. And you should be sure to clearly describe all four features of each situation — A. Setting, B. Behavior, C. Rewards and Aversives, and D. Effects on Behavior. A variation on this proposal would be to come up with one example for each of the 13 questions from all three general settings: the school/job setting, the home setting and your social life. An heroic project.

Behavior Analysis Project 2

This project will be similar in structure to the last one. Look at the behavioral procedures in your everyday life — your school, home, job or social life. Then do a behavioral analysis of them, describing the setting, the behavior, the contingency relationship, the rewards

and aversives and the results of the procedure. You may wish to make use of the table in the Conclusions section of chapter 13 as you do your analyses. Develop and analyze an example of each of the following procedures:

1. Reinforcement with an unlearned reward.
   a. Describe the setting.
   b. What is the behavior?
   c. What is the contingency?
   d. What is (are) the reward(s) or aversive(s)?
   e. How does this procedure affect the behavior?
2. Reinforcement with a learned reward. (Answer subtopics "a" through "e" above on this and all following questions.)
3. Avoidance based on unlearned rewards.
4. Avoidance based on learned rewards.
5. Punishment based on unlearned rewards.
6. Punishment based on learned rewards.
7. Reinforcement based on an unlearned aversive.
8. Reinforcement with a learned aversive.
9. Avoidance with an unlearned aversive.
10. Avoidance with a learned aversive.
11. Punishment with an unlearned aversive.
12. Punishment with a learned aversive.
13. And, finally, look at some behavior of yours that you find a little curious, like a change in attitude; then, do a behavior analysis of that situation. In other words, decide which of the procedures (listed above) were in effect during the situation you've chosen to analyze. And then describe each procedure in terms of the subtopics "a" through "e" mentioned above.

conclusions

We've looked at behavior analysis and behavior modification; now let's try to sum up their most basic features. We can draw four main points from behavior analysis:

1. All psychological events are behavioral events, therefore, we can use the principles of behavior in analyzing those psychological events.
2. Past rewards and aversives determine whether an act will occur again when the chance arises.
3. Social rewards and aversives control much more of our behavior than we often know.
4. Immediate rewards and aversives, even small ones, exert much more control over our behavior than do large, but delayed rewards and aversives. And so behavior problems often result from this extreme control exerted by those immediate rewards and aversives, causing people to miss out on more significant but distant rewards, and causing them to contact more serious but distant aversives.

In behavior modification, we try to help people make the greatest contact with those distant rewards and the least contact with those distant aversives. We do this by adding planned, immediate rewards or aversives that will compete with the existing immediate rewards and aversives, so the person can act in ways that will have the most long-run benefit.

Finally, we hope you've enjoyed this book and found it useful. And we hope you will also enjoy the remaining few pages as symbolic of those basic features of behavior analysis and behavior modification.
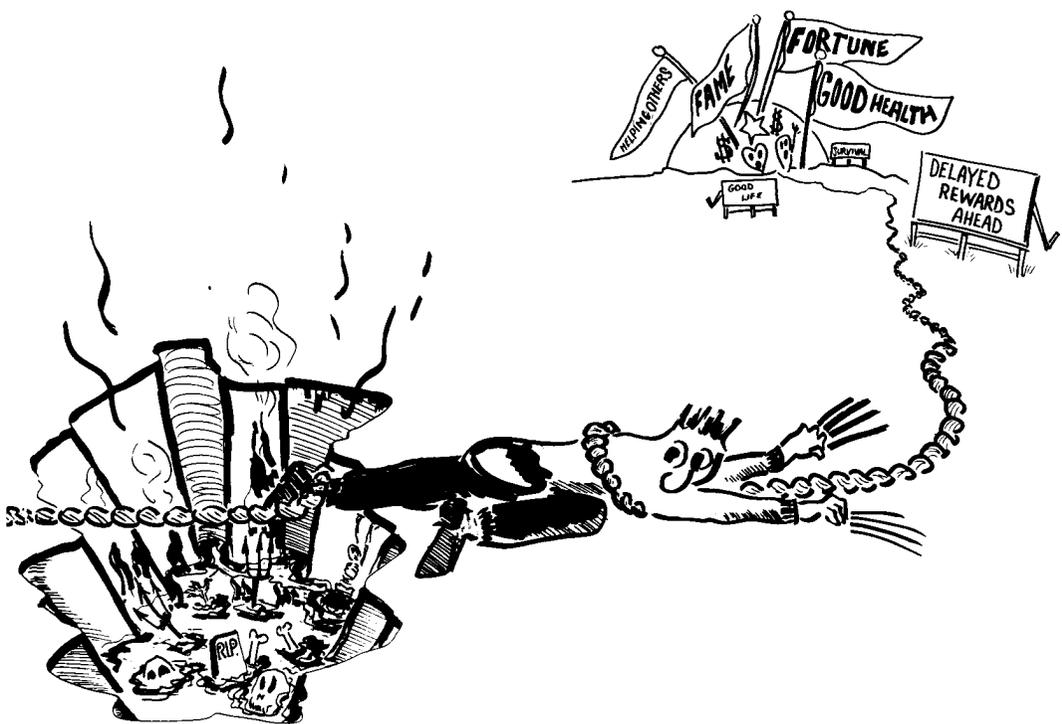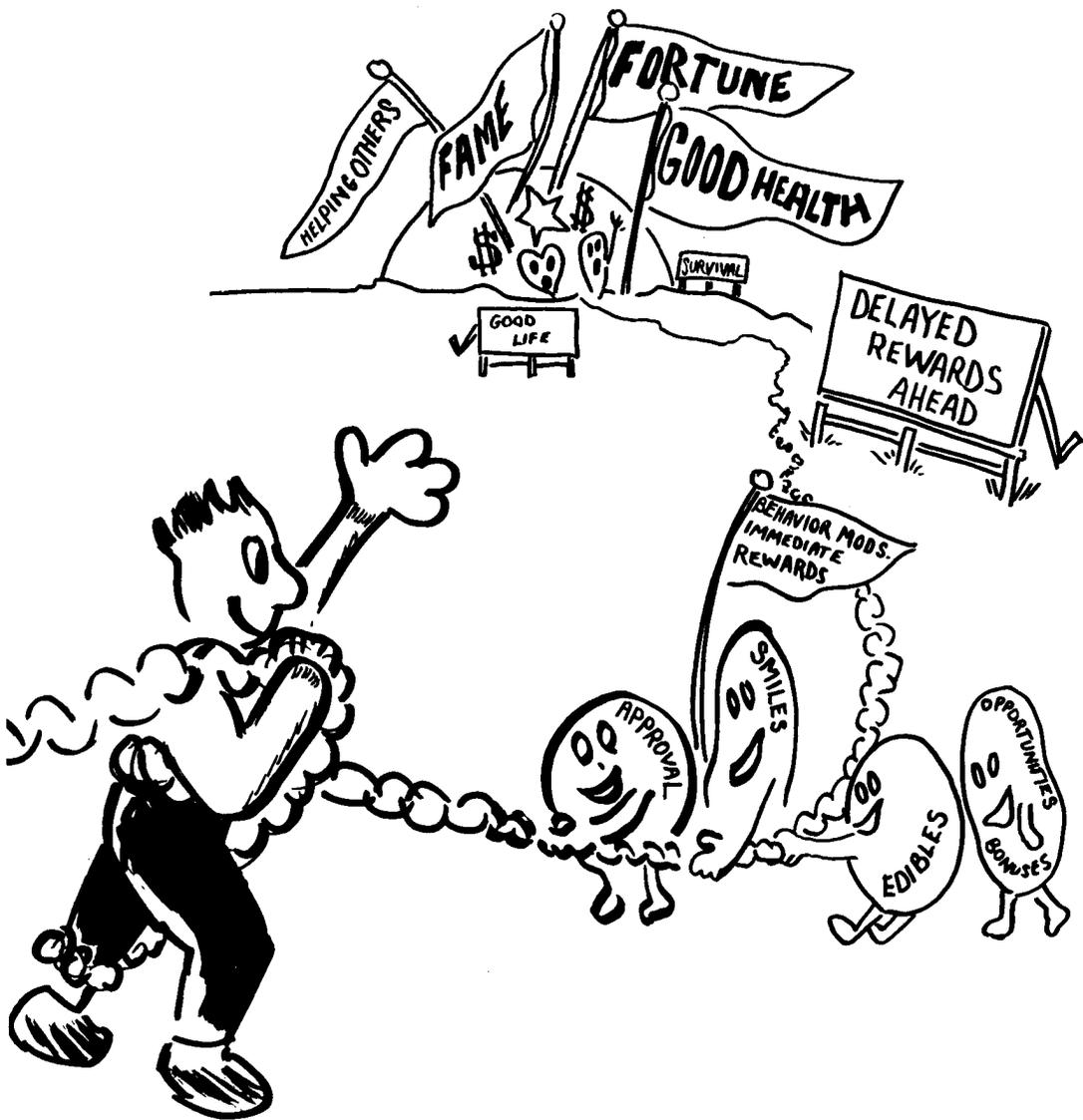
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