

CATASTROPHE, COLLECTIVE TRAUMA, AND THE ORIGIN OF CIVILIZATION

Richard Heinberg

If we consider mankind as a whole and substitute it for a single individual, we discover that it too has developed delusions which are inaccessible to logical criticism and which contradict reality. Investigation leads us to the same explanation as in the case of the single individual. They owe their power to the element of historical truth which they have brought up from the repression of the forgotten and primeval past.

-SIGMUND FREUD

Our society is made up of vast numbers of traumatized individuals, and our culture has come into being through a universally traumatizing process. The outcome -today's technological civilization with its massive psychopathologies and unending ecological disasters -is a collective reflection of the traumatized personality.

-CHELLIS GLENDINNING,
My Name Is Chellis & I'm In Recovery
From Western Civilization"

The idea that civilization is fundamentally sick goes back at least to the early Greeks. Closer to our own time, Sigmund Freud once asked: "May we not be justified in reaching the diagnosis that, under the influence of cultural urges, some civilizations or some epochs of civilization-possibly the whole of mankind-have become 'neurotic'?" Unfortunately, Freud refused to follow out the implications of this question, but other psychologists have picked up where he left off. Carl Jung wrote of "politicosocial delusional systems" having their roots in the collective unconscious; Wilhelm Reich believed that civilization was swept up in an "emotional plague"; and Immanuel Velikovsky theorized that humankind suffers collectively from amnesia and repetition compulsion.

Still more recently, as it has become apparent that civilization is in the process of profoundly and perhaps permanently impairing the biological viability of the entire planet, a new discipline know as "ecopsychology" has undertaken to expose the roots of civilization's omnicidal mania. Paul Shepard's Nature and Madness (Sierra Club, 1982), Theodore Roszak's The Voice of the Earth (Simon & Schuster, 1992), and Chellis Glendinning's My Name Is Chellis and I'm in Recovery from Western Civilization (Shambhalla, 1994) have all underscored the idea that individual psychological dysfunctions may be merely local eruptions of a collective insanity afflicting the entire civilized world. The ecopsychologists say that so-called "advanced" human societies are actually merely in an advanced state of some virulent cultural psychic disorder, and that in order to heal ourselves individually, and to restore our world to biological viability, we must find and treat the cause of our common derangement.

IN THE WAKE OF HORROR

Initially, as we seek to grapple with the idea of mass neurosis, we are compelled to draw analogies with individual manifestations of psychic distress. While a certain amount of caution is always required in extrapolating from the individual to the collective (and vice versa), in this case the method does yield some promising leads. There is, it seems, one disorder whose symptoms in individuals closely resemble the irrational, self-destructive attitudes and behaviors of civilized people acting together—a disorder that is commonly seen in war veterans and in survivors of rape, assault, abuse, or environmental disasters; psychologists call it post-traumatic stress disorder.

The symptoms of post-traumatic stress include:

- vigilance and scanning,
- elevated startle response,
- blunted affect or psychic numbing (the loss of the ability to feel),
- denial (mental reorganization of the event to reduce pain, leading sometimes even to amnesia),
- aggressive, controlling behavior,
- interruption of memory and concentration,
- depression,
- generalized anxiety,
- episodes of rage,
- substance abuse,
- intrusive recall and dissociative "flashback" experiences,
- insomnia,
- suicidal ideation, and
- survivor guilt.

Clearly, it would be absurd to argue that all civilized people, without exception, suffer from each and every one of these symptoms. Nevertheless, some symptoms do seem almost indisputably to characterize most members of civilized cultures. When hunter-gatherers encounter civilized people, they often remark on how the latter appear generally to be disconnected, alienated, aggressive, controlling, easily frustrated, addictive, and obsessive. But if civilization got its start as the result of mass trauma, presumably that trauma would have occurred in the distant past; why, then, would these symptoms appear in civilized people today, perhaps many millennia after the fact?

Psychiatrist Robert Jay Lifton, in his studies of the long-term psychological effects of the Hiroshima bombing in 1945 and the 1972 flood in Buffalo Creek, West Virginia, concluded that disasters affect more than the immediate victims; their impact is also transmitted to succeeding generations. Because the aggressive, controlling behavior and episodes of rage exhibited by trauma victims can inflict trauma on others—particularly, on children and other close family members—post-traumatic stress can infect entire families, and, conceivably, entire cultures.

It is not hard to catch civilized cultures in the act of passing trauma on from generation to generation, though it is difficult to trace the chain of abuse back to its ultimate origin. The instances are plentiful and, occasionally, brutally plain. In her book *For Your Own Good* (Farrar, Straus, Giroux, 1983), psychologist Alice Miller showed how the German people's willingness, during the first decades of the twentieth century, to submit to authoritarian domination and to participate with blind obedience in unprovoked attacks against strangers can be traced in part to violent, authoritarian pedagogical practices that were widely promulgated at the turn of the century. And these practices in turn arose from previous generations of "poisonous pedagogy." The infancy authoritarian programming of the generation that brought Hitler to power was merely a conspicuous instance of a broader pattern: Child-rearing in Western civilization is typically and systematically abusive in comparison with that among many "primitive" peoples, particularly the hunter-gatherers. Miller notes that "the scorn and abuse directed at the helpless child as well as the suppression of vitality, creativity, and feeling in the child and in oneself permeate so many areas of our life that we hardly notice it anymore." Anthropologists Colin Turnbull and Ashley Montagu, and psychotherapist Jean Liedloff, have described and analyzed in some detail how typical Western practices surrounding childbirth, informal child-rearing, and formal education alienate the infant or child from her body and its natural surroundings, suppress innate needs, implant authoritarian messages, and undermine the sense of self-worth.

In cases of severe trauma in infancy or childhood, the victim may experience dissociation, culminating in multiple personality disorder. Extraordinary abuse-especially from primary caregivers-overwhelms the child's ego. To keep from being psychologically annihilated, the child hypnotizes herself into a trance, while a secondary personality emerges to take the abuse. Over time, several-even dozens-of discrete personalities may develop, each with its own personality and ways of thinking and feeling.

Can a whole culture be dissociative? Native peoples often note that civilized people typically act at cross-purposes to their stated ideals (for example, talking about justice and mercy on Sunday morning, then practicing murderous pillage the next day). It is as though the colonial European has a divided self: "White man speaks with forked tongue." And Western civilization seems to glory in the splitting process: God is pitted against Satan, mind against body, subject against object, spirit against the flesh, angelic virtue against animal instincts, and so on. Most of these distinctions appear extreme or even nonsensical to members of non-Western cultures, whose very languages usually reflect more inclusive, less categorical patterns of thought. Colin Ross, a multiplepersonality researcher, says that Western culture has promoted the "executive ego self" to the exclusion of others. This executive ego is arrogant, intolerant, overly logical, and anti-intuitive. Ross writes: "A cultural dissociation barrier has been created and reinforced, the purpose of which is to keep other part selves suppressed, out of contact and communication with the executive self, and relegated to second-class status in the mind."

People suffering from post-traumatic stress often develop addictions as a way

to control psychic pain. Addiction is an out-of-control compulsion to fill an inner sense of emptiness with substances like alcohol or food, or with experiences like falling love or gambling. In *The Guru Papers: Masks of Authoritarian Power* (North Atlantic, 1993), Joel Kramer and Diana Alstad see addiction as an unconscious revolt against an inner authoritarian. If civilized people do have inner authoritarians, implanted through abusive child-rearing, it stands to reason that they might collectively exhibit addictive behaviors as a way of rebelling, as well as to distract themselves from pain and to fill inner voids. Historian Morris Berman writes: "Addiction, in one form or another, characterizes every aspect of industrial society ... Dependence on alcohol (food, drugs, tobacco ...) is not formally different from dependence on prestige, career advancement, world influence, wealth, the need to build more ingenious bombs, or the need to exercise control over everything." It should be noted that Berman is not merely offering a cynical commentary on our society's more egregious failures, using the word "addiction" metaphorically; he is pointing to specific addictive symptoms that are not shared by many traditional cultures, particularly those of hunter-gatherers, wherein the compulsive search for wealth, power, novelty, and gadgetry is, if not completely unknown, certainly comparatively rare.

Trauma victims frequently suffer from psychic numbing—the decreased ability to feel joy or sorrow, or to empathize with the feelings of others. Native peoples wonder how civilized Europeans can treat other humans, and the animals, trees, and land, with such unfeeling indifference. Of course, the relentless monetization and compartmentalization of our society are partly to blame: trees and animals have ceased to be magical beings and have become instead "economic resources"; people have ceased to be members of a community and have become instead "workers" or "consumers," "national allies" or "enemies of the state." Nevertheless, the questions arise: Why is it that people in Western society have failed to put brakes on tendencies to turn empathic relationships into abstract, manipulative ones—even when these tendencies are clearly out of control and acting to the detriment of people's own fundamental interests? Could it be because the population is already numbed to some extent by some ancient trauma, the destructive energy of which has been passed along from generation to generation through abusive childrearing?

Now, up to this point we have simply stated a hypothesis. Even if it is a reasonable one, it lacks any sort of proof. How would we go about supporting it with evidence? One way would be to examine human societies that have been subject to horrific disasters in recent times, and see if the traumatized survivors responded collectively by developing the sorts of symptoms we have listed, and whether these symptoms led to permanent social change. Another would be to search for evidence of an ancient trauma that might have been capable of producing multi-generational effects.

COLLECTIVE TRAUMA AND ITS EFFECTS—SOME EXAMPLES:

Anthropologist Colin Turnbull's *The Mountain People* (Simon & Schuster, 1972), is a classic, poignant study of the Ik—a hunting and gathering people of

west-central Africa who had been driven from their former hunting grounds by the creation of a new game preserve. While the Ik were not the victims of a natural disaster per se, they were nevertheless experiencing the equivalent of a catastrophe—slow starvation due to the loss of their means of subsistence.

Previously, the Ik had lived the way most hunter-gatherers do. Hunters, according to Turnbull, "frequently display those characteristics that we find so admirable in man: kindness, generosity, consideration, affection, honesty, hospitality, compassion, charity and others. This sounds like a formidable list of virtues, and so it would be if they were virtues, but for the hunter they are not. For the hunter in his tiny, close-knit society, these are necessities for survival; without them society would collapse." As for the Ik themselves, "we have the remnants of past traditions, customs and beliefs, and something of their own oral tradition, all of which indicate that they were ... an easy-going, loosely organized people whose fluid organization enabled them to respond with sensitivity to the ever changing demands of their environment. There is ample evidence in their language that they once held values which they no longer hold, that they understood by 'goodness' and 'happiness' something very different from what those words have come to mean now."

Forced to pursue an unfamiliar agricultural life in the mountains separating Uganda, Sudan, and Kenya, on land unable to support them, the Ik had changed profoundly. In less than three generations, they had become a handful of scattered hostile bands interested only in individual survival. They had abandoned compassion, love, and kindness for the sake of mere existence. Turnbull: "Economic interest is centered on as many individual stomachs as there are people, and cooperation is merely a device for furthering an interest that is consciously selfish ... In present circumstances they are highly disputatious and given to much acrimonious fighting ... They have replaced human society with a mere survival system that does not take human emotion into account ... " Children were put out of the family at age three or four; old people were sent away to die alone. "The ideal family, economically speaking and within restricted temporal limitations, is a man and his wife with no children. Children are useless appendages, like old parents. Anyone who cannot take care of himself is a burden and a hazard to the survival of others ... Such interaction as there is within this system is one of mutual exploitation. That is the relationship between all, old and young, parent and child, brother and sister, husband and wife, friend and friend ... They are brought together by self-interest alone..."

Turnbull sees clear parallels between what has happened to the Ik suddenly, in a matter of years, and what has happened to Western civilization gradually, over several centuries. Today, "The very old and the very young are separated, but we dispose of them in homes for the aged or in day schools and summer camps instead of on the slopes of Meraniang [one of the mountains of the Ik]." Turnbull points to "our cutthroat economics, where almost any kind of exploitation and degradation of others, impoverishment and ruin, is justified in terms of an expanding economy and the consequent confinement of the world's riches in the pockets of a few."

The most extensive survey of the psychological effects of mass trauma yet published is Lewis Aptekar's *Environmental Disasters in Global Perspective* (G.K. Hall, 1994). Aptekar compares studies from traditional, "developing," and "developed" cultures; he also explores the aftermaths of many kinds of disasters—including chronic disasters (droughts, famines), quick onset disasters (floods, fires, storms, earthquakes), and human-induced disasters (wars, toxic chemical spills, nuclear plant meltdowns). The findings he reviews are complex and varied, and researchers whose work he cites have come to differing conclusions. There is some controversy, for example, on a point central to the present discussion: Do the psychological effects of disasters persist for years, perhaps generations, or are they only transitory? After a thorough study of researchers' conflicting views, Aptekar concludes that discrepancies in observations probably arise from differences in the nature and severity of the disasters, the presence (or lack) of a social support system, the degree to which the environment returns to its pre-disaster state—as well as from differences in research methods (different studies of victims of the same disaster sometimes produced different results).

Aptekar first dispels misconceptions about people's immediate responses to disasters. Looting and panic are rare; instead, people more frequently display behavior that has a clear sense of purpose and is directed toward the common good (tragically, officials who believe that social chaos inevitably follows disasters often delay warning communities of impending crises because they wish to avoid a panic). Nor do people flee from disaster sites; rather, they tend to remain. In addition, outsiders usually enter the area in order to help survivors or to search for family members, producing what has come to be known as the "convergence phenomenon."

While Aptekar describes post-traumatic stress disorder and cites the work of researchers who have found its symptoms among disaster victims, he cautions that "the idea that it is common for disaster victims to develop ... post-traumatic stress disorder ... should be questioned." Symptoms seem to appear only after the severest disasters, and in cases where victims are directly and personally affected. "The victims who show the greatest psychopathology are those who lose close friends and relatives." Not all of the symptoms occur immediately, and reactions may appear years afterward, especially on anniversaries of the disaster. Gradually, people tend to distort their memory of the event, forgetting parts of what happened and minimizing its impact and their reactions to it

Children appear to be particularly vulnerable after a disaster. "Galante and Foa documented the aftermath of an extremely destructive earthquake that struck the mountainous region of Lombardy, Italy on November 23, 1980 ... Right after the earthquake the children demonstrated extreme signs of apathy and aggression." Girls tended to be more affected than boys. (Aptekar notes, "Perhaps the girls were more aware of their feelings than the boys.") Boys had a greater tendency to react with aggression.

Meanwhile, adverse reactions in adults can be so severe that disaster victims "pass fear and insecurity onto their children—even those yet to be born-by

replacing in their child-rearing a sense of a secure world with a fearful worldview."

One of the early pioneers in the study of disasters, Samuel Prince (whose work was published in the early 1920s), was convinced that disasters inevitably bring social change. Subsequent work has tended to confirm Prince's conclusions. Basing his speculations on his study of the aftermath of a large ammunition explosion aboard a ship in the harbor at Halifax, Canada, Prince hypothesized that disasters may cause changes in technology and culture in a society; and that after disasters, differences between social classes tend to increase.

Sociologist Max Weber wrote that disasters tend to produce charismatic leaders—an observation that has been confirmed in various cultural settings. In nonindustrial societies, according to Aptekar, "Before a disaster, traditional local leaders are important; but as the society adapts to the changes brought about by a disaster, new leadership skills are needed." When pastoral Somali nomads were forced by drought to assume a sedentary agricultural way of life, "their once pastoral democracy was converted to a severe hierarchy of social status; cooperative leadership changed to leadership by domination ..."

In an attempt to discover the sources of warfare in human society, anthropologists Carol and Melvin Ember compared 186 mostly nonindustrial cultures and found a strong correlation between disasters and armed conflict. In most instances, war seems not to have been brought on by the actual scarcity produced by the disaster, but the fear of having no food as a result of an unpredictable recurrence of catastrophe. This led some groups to attack others in an effort to store enough to guard against scarcity. Then, the anticipation of being invaded increased each group's fears of others.

Disasters may also bring changes in work habits, gender roles, and kinship patterns. Studies of Pacific island cultures by Firth (1959), Schneider (1957), and Spillius (1957) point out that (in Aptekar's words) "the progression of societies from traditional ways to those of the developing world is greatly speeded up by environmental disasters." Again, Aptekar: "Among the !Kung bushmen of the Kalahari desert, drought now determines where and how they live. Among the Navajo, alliances between kin and family groups changed as a result of drought. Because of drought the Tikopia of the South Pacific rescheduled their adult initiation ceremonies to occur much later, thus introducing what for them was a new developmental phase of life: adolescence. After an earthquake the Inca of Huarez, Peru, moved from a local bartering economy to an urban service economy. Typhoons on the island of Yap caused Yapians to abandon their traditional values and adopt a European lifestyle. Because of Typhoon Ophelia the people of the Micronesian island of Ulithi changed the food they ate, the style of homes they lived in, their habits of work, the way men and women related to each other, their form of government, and even their religion."

In "developed" (i.e., highly civilized) cultures, patterns of reaction are somewhat different. In many instances, impacts are minimized because of the

almost immediate availability of elaborate aid and support systems. Yet disaster researcher Benjamin McLuckie hypothesized (in 1977) that "the higher the society's level of technological development, the more vulnerable it would be." That is because people in developed countries live in large population centers and rely on sophisticated technologies, so that there is a possibility of their being vulnerable to a large-scale collapse of interlocking systems of transportation, communication, water supply, and food distribution. It is worth noting, in this regard, that most civilizations seem to fall because of human-made disasters.

Indeed, civilization itself can be seen as a disaster-in-progress, traumatizing people as it destroys nature, relentlessly preparing the way for its own demise. The social effects noted two paragraphs above, quoted from Aptekar, are the same sorts of effects that vast numbers of human beings are experiencing now as a result of technological and economic change. Traditional modes of work, patterns of subsistence and nutrition, social and family relationships, religious ideas and practices, and common values are all vulnerable to the ravages of "progress."

SUMMING UP SO FAR

In history, effects become causes: wars beget wars, which beget political, economic, and social changes that may later lead to still more wars. The search for ultimate causes is nearly always frustrating. However, natural disasters are sources of change that come from outside the human social system and that are capable of introducing influences unimaginable in a closed human system.

But then, is there any such thing as a closed human system? Of course, there is not: all societies are highly dependent on soil, climate, and ecology. A change of a few percent in the Sun's output of energy would bring every human culture to a dramatic end.

Civilization appears in many respects to be a pathetic and futile attempt to create the feeling of a closed human system. Agriculture partially unlinks humans from wild nature; the division of labor unlinks people from the process of agriculture (leaving only their dependence on its products); and cities and technologies psychologically unlink people from their environment in manifold ways. People become ever more dependent on complex social and technological systems; their dependence on wild, natural systems persists, but is forgotten and hidden from view. Could this compulsion to escape external influences by substituting artificial systems under human control have originated as a collective strategy to elude the ravages of natural disasters? As we have seen, in many-but not all-cases, survivors of disasters and civilized people alike ...

- show symptoms of post-traumatic stress disorder
- pass psychological dysfunctions onto their children
- tend more frequently to undertake basic changes in values, lifestyle, and social organization, and

-are more warlike

... than people who live in traditional societies that have not experienced a major disaster within the past few generations.

As yet we have left many questions unanswered. The most obvious of these is simply, Can we identify the original trauma? No less significant, however, are two others: How do we go about treating collective trauma?, and, What is the significance of this discussion in the present, as our own society lurches toward a human-made disaster of unprecedented scope?

IDENTIFYING THE SOURCE OF TRAUMA

There are two classes of possible causes of civilization's original trauma: events that stemmed from human agency, and ones that did not. And of the latter-causes that arose beyond the human sphere-there are also two types: endogenous (those that resulted from processes operating within Earth's systems) and exogenous (those triggered by an agent beyond Earth).

It is theoretically possible that at least some of civilization's ancient psychic wounds were self-inflicted. Freud believed that humanity's original trauma was the Oedipal crisis, in which sons in the primeval cave typically killed their fathers in order to possess their mothers. However, no archeological evidence has ever been found to suggest that this actually happened, on even a small scale. A much more plausible scenario is that at the end of the Pleistocene-roughly 11,500 years ago-human beings allowed their populations to exceed the carrying capacity of the land and brought on starvation through overhunting.

It is also possible that some non-human agent was responsible for the catastrophe(s) that led humans to domesticate themselves. Likely non-human candidates of an endogenous nature include earthquakes, floods, fires, volcanoes, and climate change. Possible exogenous culprits include wayward comets or asteroids.

How do we go about determining which (if any) of these possible non-human sources of trauma might have been the actual one? Naturally, we should consider the evidence-of which there are again two kinds: material and cultural.

The material evidence of ancient catastrophes includes ice cores, lake bed cores, tree rings, topographical anomalies, and fossils. From these, scientists have deduced that for the past 2.5 million years our planet has been on a climatic roller coaster-a general cooling trend featuring Ice Ages that come about every 100,000 years and last 90,000 years or so, during which temperatures fluctuate wildly, leading to intervening warmer periods of a few thousand years. We are in one of those warm periods now. It was during these past 2.5 million years, according to evolutionary biologists, that humankind evolved, our brain increasing in size fourfold.

During the last 120,000 years (encompassing the most recent Ice Age) there

have been roughly 20 sudden and drastic cooling and warming episodes, averaging one every 6000 years. The end of the last Ice Age occurred about 11,500 years ago; not long afterward, humans in some areas began the process of domestication. Like the beginnings and endings of the Ice Ages that preceded it, the close of the most recent glacial period came suddenly, and it brought devastation in its wake. Sea levels rose by some 300 feet over the course of centuries. Hundreds of species were extinguished, including (in America alone) the camel, mastodon, mammoth, ground sloth, giant peccary and giant beaver, dire wolf, short-faced bear, mountain deer, and saber-toothed cat. Some paleontologists believe that human beings hastened a few of these extinctions through overhunting.

Also, the Earth's magnetic field has apparently reversed its polarity some 20 times during the past 4 million years-most recently, about 12,500 years ago in the so-called Gothenburg flip. There seems to be some correlation between extinction episodes, climate change, and geomagnetic reversals. It is not clear whether climate fluctuation causes field reversals (through changes in the volume of ice at the poles), or field reversals causes climate change (via volcanic activity or a collapse of the ionosphere and ozone layer), or whether both are produced by cosmic collisions.

Clearly, the Earth was not a quiet place during the time Homo sapiens was evolving. But what about the period when civilization was emerging? More recent global climate spikes (not as severe as the ones 40,000 and 11,500 years ago) occurred at around 8000 B.C.E., 6000 B.C.E., 3100, B.C.E., and 1100 B.C.E. A climatological fluctuation known as the Little Ice Age lasted from 1200 to 1800 C.E., and was made even worse for parts of that period by volcanic eruptions that clouded the atmosphere and lowered temperatures worldwide for years at a time (1783 was the year of the "dry fog," while 1816 was known as "the year without a summer"). Localized floods, earthquakes, violent storms, and volcanic eruptions known to have occurred during the past 10,000 years are far too numerous to list here, and it seems likely that archeologists and geologists have discovered and interpreted evidence of only a fraction of such disasters that actually took place.

Many of these events may have been endogenous in nature. But in the case of global climate change-and, possibly, field reversals-extraterrestrial factors may have played a role. In the early 1980s, astronomer Fred Hoyle hypothesized that the Ice Ages (and other abrupt climate shifts as well) could only have been brought on by collisions of Earth with asteroids or comets.

In the year 536, according to tree-ring measurements, just as many of the civilizations of the period were suffering major setbacks, there was a sudden worldwide decline in tree growth that lasted about 15 years. Since Greenland ice cores show no signs of large-scale volcanic activity for that time, the most likely explanations are comet impact or cosmic dust. British astronomers Victor Clube and Bill Napier have calculated, on the basis of observed cratering rates on the Earth and Moon, that we should expect the collision of a meteor or comet "of several megatons energy to occur somewhere on Earth every 200 years or so." Further, "a few dozen sporadic impacts in the tens of megatons, and a few in 100 to 1000 megaton range, must have

occurred within the past 5000 years." Comet collisions don't always leave an obvious crater: the comet that struck near Tunguska, Siberia in 1908 (if, indeed, it was a comet) is estimated to have weighed 1000 tons; its fiery above-ground explosion flattened trees for miles in all directions but left no crater. We should expect an impact of similar energy about every 20 years on average; but, given that two-thirds of incoming meteors or comets fall into the oceans, one of similar size is likely to strike land only about once every 60 years.

Of course, the kinds of collisions we are talking about would have been awesome spectacles-giant fireballs streaking across the sky accompanied by thunder and lightning, leaving huge serpentine trails, blotting out the Sun with their smoke or turning night into day, and culminating in explosions comparable to the simultaneous detonation of hundreds of hydrogen bombs.

In short, the physical evidence shows unequivocally that our planet is disasterprone, but it does not point to a single dramatic event that would have traumatized humankind once and for all. Rather, the possible sources of trauma are all too plentiful.

We should next consider cultural evidence bearing on the nature of the catastrophe(s).

While some mythologists (such as Joseph Campbell) have maintained that ancient myths contain no reliable historical data whatever, I have argued elsewhere (in *Memories and Visions of Paradise Quest* 1995) that "... anthropologists and archeologists have uncovered many instances in which myths do unquestionably conceal [or reveal!] elements of historical fact"; there I cited the examples of the Klamath Indians' memory-based myth of the origin Crater Lake, and Aboriginal Australian Dreamtime stories that feature animals that have been extinct for some 10,000 to 15,000 years.

Every mythologist knows that tales of ancient catastrophes of one sort or another constitute an extremely widespread and common genre. Examples range from the biblical story of the Deluge to Plato's account of the destruction of Atlantis; from South American myths of universal destruction by fire and water to the aboriginal Australian depiction of the end of the Dreamtime. Many cultures-including the Chinese, Hopi, Greek, Aztec, Iranian, and Indic-recall a series of four or five World Ages, each ending in catastrophe. Many catastrophe myths ascribe responsibility for these calamities to human beings.

If we were to attribute some historical truth to such myths, we would, I think, conclude from them (as from the physical evidence) that more than one catastrophe traumatized ancient humanity. Since many cultures viewed comets and other unusual celestial phenomena with extraordinary dread, we might also conclude that at least some of these catastrophes had an exogenous source. And since many myths blame the people themselves for catastrophes, we should leave open the possibility that some disasters were humanly caused.

The first of these conclusions finds support in other fields. In individual psychology, the effects of trauma seem most severe and long-lasting in cases

not of singular, but of repetitive abuse or injury. And the Embers' findings on the origins of violence (cited earlier) likewise suggest that if civilized humanity's destructive tendencies arise from post-traumatic stress, the source would likely have been a series of disasters occurring at unpredictable intervals.

HUMANITY: WOUNDED AND PRECOCIOUS

It appears that humankind has had a trying childhood. And just as some abused children cope with adversity by plunging themselves into intellectual or creative activities, perhaps humanity as a whole has done something similar. Neurobiologist William Calvin, in his *The Ascent of Mind: Ice Age Climates and the Evolution of Intelligence* (Bantam, 1990), suggests that it was by matching wits with frequent climate changes that our early ancestors learned to develop their capacities for language, culture, technological innovation, and ethics.

For biologists, the evolution of modern *Homo sapiens* constitutes one of the greatest of mysteries. We differ from the apes in a hundred ways: language, accurate throwing ability, concealed ovulation, dramatically increased brain-to-body size ratio, different hand anatomy, lack of body hair, descended larynx, flatter face, smaller teeth, and so on. It is not so difficult to explain how one or another of these developments could have occurred in a couple of million years, but all of them taken together constitute virtually a miracle of evolutionary transformation. Calvin suggests that we look to only a few basic causes, of which each would have had multiple effects. For example, if early humans spent much of their time living in open savannas, this might account for our transition to seed eating and our upright posture. And if we spent another phase of our development foraging for food along shorelines, living partly in water, this might explain features we share with the aquatic mammals—our subcutaneous fat, salt-and-water wasting kidneys, tearing, and descended larynx, among others.

But what of brain size and intelligence? Calvin suggests that repeated, drastic climate fluctuations were the motivating factor, acting as a kind of evolutionary "pump" encouraging change in certain directions: "[W]e look at the back-and-forth Ice Ages and see in them not just overblown winter but a way of amplifying the effect of the wintertime natural selection ...". Calvin's hypothesized winter-specialized hominid subtype—which would have relied more on hunting, and therefore would have developed better throwing skills than its more tropical cousins—would have expanded its population during warmer boom times in order to take advantage of ice-free land; when the ice returned, the hunters would simply have moved south. With each warm/cold fluctuation, the winter-specialized types would have grown to constitute a greater percentage of the overall hominid population.

Calvin suggests that it was through juvenilization that these versatile hunters developed bigger brains for making, aiming, and throwing projectiles. The juveniles of most mammals have a bigger brain/body ratio than adults, as well as flatter faces and smaller teeth. If, in a given population, puberty gradually occurs earlier, somatic development will be cut short, and after

many generations the adult population will acquire juvenile characteristics. Calvin argues that the alternation of harsh and hospitable climates during the past couple of million years encouraged early maturity: during boom times "there [was] a race to fill up newly available 'job slots' afforded by an environment able to feed more mouths." When the ice returned, juvenile body features were retained. And once brain size had grown, new uses were quickly found for all this new gray matter-such as the invention of language and culture.

Calvin emphasizes that there is still a lot to account for and that the problem is complex-"So much brain enlargement in 2.5 million years is awfully quick by the standards of evolutionary biology"-and he admits that his explanation may not be the final one. An alternative theory he doesn't mention is that human beings are the result of genetic experiments on the part of extraterrestrials. This suggestion is admittedly beyond the pale of conventional scientific thinking, but it is really not so far-fetched in light of ancient myths about culture-heroes and creator gods, and modern UFO sightings and abduction accounts. If the ET genetic-experiment hypothesis turned out to be true, it would not deny the role of catastrophes in the shaping of human culture and consciousness, but it would surely add a bizarre twist to the story.

Still, let us assume that Calvin's explanation (or something like it) is right: Catastrophe and trauma (via sudden, drastic climate changes at unpredictable intervals) have led us to become intelligent tool users. But it seems they have also planted seeds of alienation and distrust within our vastly enlarged brains. Perhaps, as Paul Shepard suggests in *Nature and Madness*, in addition to physiological juvenilization we have also undergone a stunting of our psychological development. Civilization, according to Shepard, produces people who are incomplete, infantile-self-absorbed "adult children" who tend to be dependent on parental authority figures.

Deep down we seem to believe that the gods are angry at us. What have we done wrong? We must be flawed, sinful children who deserve the gods' (our parents') wrath. Nature is cruel and chaotic. We must defend ourselves, propitiate the gods, and make sure we have a surplus for when the next disaster strikes.

SOME PROBLEMS AND POSSIBLE SOLUTIONS

The matters we have touched on are complex and raise many questions. Let us briefly consider three of the most obvious ones.

Problem: Why would only a few cultures react to catastrophes by developing civilizations? After all, most human cultures, historically, have maintained modest hunting-and-gathering, horticultural, or pastoral ways of life. Were these people not traumatized? If not, why not? If they were, why did they respond differently?

Possible solution: Even in the case of global disasters-climate change and comet impacts-the effects would not have been geographically uniform.

Moreover, it is entirely possible that distinct cultural groups would have been predisposed to handle trauma in varying ways. It is true that some cultures have maintained a much greater sense of harmony with nature than have others; however, evidences of collective psychopathology are not unique to Western civilization: in nearly every culture it is possible to point to some institution, rite, or taboo that could have had its origin in mass psychological trauma.

Problem: Why were no other animals similarly affected? Why didn't horses, monkeys, squids, and parrots develop big brains, technology, language, and cultural neuroses?

Possible solution: Perhaps they were affected, but responded differently. The creation myths of many cultures speak of a time (before the catastrophes) when the animals were less aggressive or fearful and when a universal harmony prevailed throughout nature. Of course, such myths need to be regarded with healthy skepticism, but they may hold some kernel of historical truth. In most higher animals, behaviors are scripted by instinct, while in humans (for reasons William Calvin may be partly able to explain) culture has largely usurped instinct's role. If traumatic stress caused at least some humans to develop dysfunctional cultures, then it is possible that the same stressors caused at least some animals to develop dysfunctional instincts. The lemmings' suicidal boom-and-bust population behavior is one possible example.

Humans' unique responses to stress may be traceable partly to their unique brain structure. In *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (Houghton Mifflin, 1976/1990), Princeton psychologist Julian Jaynes anticipated Calvin in suggesting that "it is possible for the brain to be ... reorganized by environmental changes." With the Ice Ages came the development of language, and with language came the invention of an analog inner world of words, paralleling the behavioral world "even as the world of mathematics parallels the world of quantities and things." Jaynes argued that, in its early stages, the use of this new linguistic ability was split between the brain's hemispheres: the right hemisphere spoke to the left, and its voice was interpreted as being that of a god. This bicamerality may have served to obviate the stress of decision-making during times of environmental change. But later, during the early historical period, as civilizations were developing, the bicameral organization of the human mind began to collapse. This, says Jaynes, was partly due to the invention of writing: once the words of the gods were written, they became silent and could be turned to or avoided at will. But disasters also played a role: "The second millennium B.C. was heavy laden with profound and irreversible changes. Vast geological catastrophes occurred. Civilizations perished. Half the world's population became refugees. And wars, previously sporadic, came with hastening and ferocious frequency..." The gods fell silent, and left-brain-dominant humans were left to fend as best they could. The result was the dawn of rational self-consciousness, of alienation and anxiety, and of a condition in which "we have become our own gods."

Problem: I have suggested that the traumatic energy of ancient disasters is passed along from generation to generation via civilized child-rearing

methods. If so, we might expect the post-traumatic stress symptoms evident in civilized populations to gradually dissipate over the centuries and millennia, or at worst to remain constant. Yet we now face humanly generated social and ecological problems of unprecedented scope and severity. Why would these problems be increasing, if they are the effects of some ancient trauma?

Possible solution: It may be that civilization is (or can be) a progressive social disease. In individuals, a progressive disease is one in which the body's natural defense systems are overwhelmed or subverted; rather than improving, the patient becomes sicker and sicker.

Civilization progressively re-traumatizes itself-not only through child-rearing practices, but through economic inequality and poverty, environmental destruction, alienation from nature, and war. Thus as civilization "advances," the effects of the original trauma are magnified. Add to this the impact of natural disasters that have occurred in relatively recent times-such as the Black Death in medieval Europe, in which nearly one third of the population was wiped out, and which may have helped prime the European psyche for witch hunts and bloody colonial exploits.

The idea that our psycho-social disease may be a progressive one is disturbing, of course. Even worse is the realization that we are infecting and killing our only potential therapists-the primal cultures of the world, who appear to have been less traumatized than ourselves, or at least to have found more sensible ways of coping with their wounds. If we cannot look to them to save us from our own folly-and, realistically, we have no right to expect them to do so-then we must learn somehow to heal ourselves.

RECOVERING FROM COLLECTIVE POST-TRAUMATIC STRESS

How would one go about treating an entire culture for post-traumatic stress? The difficulties involved are considerable-especially in a chronic case, or one in which the society in question doesn't want to be treated. It is difficult to know even where to begin, given a "patient" so huge, powerful, and deranged as our contemporary global civilization. Such a task may actually be impossible. But perhaps we can heal ourselves and one another individually, at least to some degree, and thereby plant the seeds of a new sane and biologically benign culture. In order to do so, it would seem vital that we familiarize ourselves with what is presently known about individual trauma treatment and recovery.

In cases where the original trauma is long past, the most important aspect of treatment seems to be the recollection and emotional processing of the traumatic event. Whether humankind as a whole can recall events millennia ago is problematic; it seems more feasible for individuals to bring to mind and face the specific ways in which they were taught-beginning at birth-to throttle their wildness and conform to a contorted system of beliefs and behaviors. A therapist or therapeutic community is often helpful in this regard-assuming that the purpose of therapy is not seen as being merely to help the patient adjust more successfully to society as it presently is.

Another step in recovery is to learn to feel our repressed grief and rage-as well as our repressed joy. Chellis Glendinning, Buddhist scholar Joanna Macy, environmental educator Annie Prutzman, and others have suggested ways to safely uncork the vessel of our dammed-up emotions via psychodrama and storytelling.

It is also possible to benefit from techniques used in shamanic cultures for the reintegration of nature and psyche. Primal peoples resort to prayer, dancing, drumming, and purification rites in order to restore the wholeness of individual, community, and nature. While mere imitation of such rites may constitute a kind of cultural theft, we may nevertheless find similar ways of working in small groups to call upon ancestors, spirits, and natural forces to assist us in our healing.

Recovery may not penetrate past the surface layers of consciousness without significant, deliberate lifestyle changes. As long as we are utterly dependent upon civilization it is difficult for us to see its influences with any objectivity, or to forge a new relationship with the natural world. And disconnecting from the civilizational system-via natural home-building, growing or gathering much of one's own food, and providing for other needs with a minimal use of money-tends to induce feelings of basic self-worth and competence.

Independence from the system need not be seen as abandonment of responsibility, however. Often a member of a dysfunctional family will stay in the abusive situation in order to try to fix it from within. In cases like this, a therapist will usually counsel the individual to leave, since it is only from a secure position outside the abusive situation that one can have a positive impact on those still within it. Perhaps something similar is true with respect to individuals awakening to the dysfunctionality of civilization: we can be of more help to other people if we are not entirely dependent on the system that is progressively reproducing its woundedness. Then our activism is grounded not just in anger and pain, but in knowledge of workable alternatives.

It may be possible to forge a path toward sustainable culture only so far in one lifetime. Perhaps our greatest responsibility, therefore, is to explore whatever routes we can, go as far along them as we can, and then pass on whatever we have learned. Children growing up in-or under-the dominant culture today are inevitably subject to nearly constant trauma, some forms of which are extremely sophisticated and seductive. Unless some young people are provided with effective tools for self-defense, self-expression, exploration, and creativity, and examples of what it is to be a relatively free and happy human, the way ahead looks bleak.

IMPLICATIONS FOR THE FUTURE

Of course, every sane person would wish to avert another disaster; everyone hopes that civilization can somehow quickly reform itself so that we don't have to face massive starvation and ecological devastation in the coming

century. But it would be foolish to ignore the implications of current trends. The likelihood is that those of us who will be around in the early decades of the next century will experience a catastrophe of one sort or another first-hand-either one that is humanly caused or an "act of God" whose effects are experienced far more severely as a result of population density and the interconnectedness and vulnerability of civilization's systems of transportation, communication, food delivery, and political control.

How will people respond? According to Lewis Aptekar, victims of humanly induced disasters often show more stress than victims of natural disasters because of the perceived need to find parties to blame. Whatever the eventual circumstances, it seems certain that groups in differing geographic areas, and in differing economic conditions, will react in dissimilar ways. In the case of a breakdown of communication and control, those who are more dependent on high tech will likely suffer much more than those who are still somewhat accustomed to locally filling their own basic needs. Over the short term, we are likely to see acts of extraordinary heroism alongside extreme examples of opportunism and stupidity. But what about the long-range prognosis?

If human beings are re-traumatized, will they develop even stranger cultural neuroses than the ones they already exhibit? Or will at least some of us learn from the experience? The fact that we are now coming to understand how the human psyche typically deals with trauma is cause for hope: perhaps a significant number of people will experience civilization's crisis as a catharsis that will reach all the way to the roots of our ancient, irrational fear of nature, and help us learn to live in peace with the Earth, with one another, and with ourselves.