

The Cultural Aspects of the Ecological Crisis

A cultural theme most middle class Americans have grown up with is that change is not only a normal aspect of existence, but that it is also progressive. The steady stream of technological innovations, from computers that exploit dimensions of time that exceed what most people can comprehend to advances in biomedicine, suggest that this aspect of our belief system is still intact. Other aspects of society appear to be breaking down—urban violence, teen pregnancies, the spread of drugs, increasing numbers of homeless and impoverished, skyrocketing national debt. Yet science continues to promise technological and thus human advancement. Change continues, but a growing body of evidence strongly suggests that our sense of living in one of the most progressive times in human history may be an illusion. The computer, for example, may be increasing our efficiency in finding solutions to certain technical problems, including how to store and manipulate the mountains of information we have come to believe necessary for effective decision making. But this form of change pales in significance when compared to changes taking place in the life sustaining capacity of our habitat.

The increasing number of reports on the changing characteristics of the planet's ecosystems indicate that over the long term they are in decline. They also suggest that in the immediate decades ahead we face the growing prospect of having to change the most fundamental aspects of our belief system and patterns of social life. The challenge will be to see through the illusions of a consumer-oriented, technologically based existence, to alter the premises upon which the

belief system of the dominant culture is based, and to retain those aspects of our past cultural achievements that are compatible with a culture in equilibrium with the carrying capacity of the natural systems that make up the biosphere.

There are many dangers. One scenario of future possibilities is a continuation of the state of self-absorption that characterizes the addictive personality (and culture) until the consequences of environmental disruption lead to economic dislocation and a significant loss of human life. There are other possible scenarios, one extreme being the emergence of a fascist form of government that attempts to regulate human life according to master plans drawn up by technocratically oriented bureaucrats. The other extreme would be a widely held sense of despair and futility about the prospects of changing cultural beliefs and practices in time to avert overshooting the carrying capacity of the natural systems. With the long-term prospects appearing so bleak, people may turn to the short-term pleasures and unconcerned attitudes associated with consumerism.

Although the rate of change in the ecosystems has been accelerating in the last hundred years, the real acceleration occurred in the post-World-War-II era. Awareness within the dominant culture of human interdependence with natural systems is a relatively recent phenomena. Aldo Leopold's gentle and poetic *A Sand County Almanac* provided an analogue for living in a less exploitive relationship with the other forms of life that make up the environment. His book, calling for the development of an ethic toward the land that would supplant the tradition of viewing the environment primarily in economic and political terms, was published in 1946. Rachel Carson's *Silent Spring* (1962) provided in a way that could be understood by the general public the scientific evidence that our technological approach to the environment threatened the basis of all forms of life—including our own. By the time of Paul Ehrlich's *The Population Bomb* (1968) and Barry Commoner's *The Closing Circle* (1971), the environmental movement was gaining a wider following within certain sections of society. The point being made here is that the recognition that cultural practices cannot evolve independently of a concern for the well-being of the habitat goes back a mere forty years; and it was an awareness unevenly understood and appreciated within

mainstream society. Native American cultures, of course, had evolved in ecologically responsive ways; but what could have been learned from their thousands of years of experience in adapting to the unique characteristics of their habitat was ignored because they were perceived as unenlightened and pre-modern.

The discrepancy between the view of cultural change held by the middle class and the nature of environmental change can be seen in the findings of scientists who are studying the interactive environmental systems that make life possible as we know it. The schema of understanding based on Western culture represents change as a progressive expansion of human possibilities: personal freedom and individual advancement, control over life-threatening situations, power to solve problems and direct the course of future events, and of course an expansion of possibilities for consumption. The expansion of human population (from 1.6 billion in 1900 to 5 billion in 1986) and the corresponding increase in world economic activity (from 0.6 trillion dollars in 1900 to 13.1 trillion in 1986) are indeed impressive figures. But this growth in the number of people and the scale of economic activity has also increased the disruptive impact of humans on the habitat. Here the trend line indicates a decline in the viability of natural systems.

The cultural image of progress is, in part, based on scientific-technological developments, such as the synthesizing and introduction into the environment of approximately seventy thousand different kinds of chemicals, as well as the widespread use of technologies for transportation that burn fossil fuel—to cite just two examples. The scale of human impact on environmental systems, which scientists view as accelerating over the last three hundred years—with a particularly large jump in the rate of change occurring during the last 50 years—is indeed daunting. According to the lead article in a *Scientific American* special issue (September 1989), "Managing Planet Earth," the planet since the beginning of the eighteenth century has lost forest cover equal in area to the size of Europe. And the rate of deforestation has now increased to between 70,000 and 110,000 square kilometers of land a year, which is equivalent to the combined land mass of the Netherlands and Switzerland. To put it another way, an additional one percent of the total forest cover is

being lost each year, and the rate is accelerating. The concentrations in the atmosphere of methane and carbon dioxide—two chemicals viewed as contributing to the greenhouse effect—are estimated to have increased 25 percent over the last 300 years. Taking into account changes in current levels of population and economic activity, it is projected that the concentration of carbon dioxide in the atmosphere will have doubled sometime after the year 2030—which will be well within the lifetime of the children of the readers of this book. Although there is not agreement among scientists about the factors that contribute to the greenhouse effect—the influence of cloud cover, the exact inventory of the earth's carbon dioxide absorbing biomass, and so forth—there is agreement that the earth's atmosphere is warming at an accelerating rate, and that this trend will have unknown consequences on precipitation patterns, agricultural production, forest zones, and—given even just the expected rise in sea level—on human settlement.

Changes in other natural systems also show a clear downward spiral in life-sustaining capabilities. Essential sources of water, such as aquifers, are being rapidly deleted in certain parts of the world, and major rivers such as the Nile, Ganges, Mississippi, and Colorado are running at reduced flow rates as ever more demands are placed on them. The levels of acidification of lakes and soil are increasing dramatically in the Northeastern part of the United States and Canada, as well as in Europe, China, and parts of India. With more land being brought under irrigation, salinization, estimated at twenty percent of irrigated land in the United States, is becoming a problem. Other changes in the life sustaining capacities of the environment include the impact of human waste and chemicals on marine ecosystems, the accelerating of species extinction as deforestation and other land use practices reduce the amount of natural habitat, and the dumping on the environment of toxic waste (over twenty billion pounds in the United States in a single year) as well as other human garbage.

Although scientists and others studying the changes in the earth's ecosystems may disagree on the figures used to understand the interactive patterns that sustain the biosphere as a living system, and the passage of time will make obsolete much of the data currently used to understand the

scope of the crisis, the direction of environmental change is unmistakable. With the possibility of the earth's population doubling within the next thirty years from 5 to 10 billion people, most of the increase will occur in Third World countries that are trying to increase their levels of economic activity in order to accommodate the increase in population and to raise living standards, the rate of environmental degradation will likely increase. The 1987 report of the World Commission on Environment and Development, *Our Common Future*, estimates that the anticipated increases in population may result in a five- to ten-fold increase in what is now a 13-trillion-dollar world economy. This may be seen as continued evidence of human progress when viewed through our cultural framework but in terms of further impact on already stressed ecosystems it has catastrophic implications.

This brief overview is not meant to be alarmist; it simply summarizes trends that are documented on a daily basis in newspapers with headlines that announce environmental problems around the world, from "Italy Copes with Summer Slime" (125 miles of coastline strangled in a mass of algae that stretches 20 miles out to sea) and "East Germany's Ghost Towns" (towns that are disappearing from the map because of practices surrounding the strip mining of low-grade, high-sulfur brown coal) to "LA Making Last-Gasp Effort to Clear the Air." Television coverage of environmental "disasters" and "catastrophes" are becoming so frequent that these words are losing their power to hold the public's attention; ozone holes, oil spills (even on the scale of the Exxon Valdez), burning and cutting the rain forest, and nuclear contamination seem like an unending succession of media events that for a brief period occupy the public's attention before being displaced by new announcements and revelations. This overview thus is related to what the scientific reports and media coverage are not dealing with—namely, the cultural and, by extension, educational aspects of the problem.

The special reports on the environment, which range from the Worldwatch Institute's yearly publication, *State of the World*, to such journals as *The Economist* and *Scientific American*, frame the problem in terms of a rationalistic approach to problem solving. This is not surprising, because the people who either carry out the studies of environmental

change or summarize the data for a nonspecialist audience have largely been educated at universities in an ideology that holds human action to be based on a rational process. According to this view, information is the basis of rational thought. Thus, the reports are framed in a way that will provide rational people with the data necessary for understanding the nature of the problem, and for acting, primarily through enactment of new environmental legislation, in a more environmentally responsible manner.

The report of The World Commission on Environment and Development, *Our Common Future*, and the Worldwatch Institute's *State of the World* are typical of the way in which the environmental crisis is being presented. Both present scientific data and suggest critical areas in which new policies and legislation—both on the national and international level—are needed to guide human behavior toward a way that is more environmentally sustainable. Both reports refer to humans in terms of people, society, and governments; but references to culture (indeed, cultures) are totally lacking. The special issue of *Scientific American* on "Managing Planet Earth" contains an article "The Changing Climate," where this rationalist view of human behavior is clearly represented. Reflecting on the social significance of recent studies of climate change, Stephen H. Schneider, a leading scientist in the area of climatology, commented that,

I am often asked whether I am pessimistic because it will be impossible to avert some global change. At this stage, it appears, no plausible policies are likely to prevent the world from warming a degree or two. Actually I see, a positive aspect: the possibility that a slight but manifest global warming, coupled with the larger threat forecast in computer models, may catalyze international cooperation to achieve environmentally sustainable development, marked by stabilized population and the proliferation of energy-efficient and environmentally safe technologies.¹

William D. Ruckelshaus, writing in the same issue of *Scientific American*, urges that "a clear set of values consistent with the consciousness of sustainability" be articulated by national leaders.² Provide the data, state the issues clearly, utilize

government incentives, and people will have a rational basis for changing their life styles. Again, we find the assumption that humans are rational beings when they have the right data, but no acknowledgement that people are essentially cultural beings, that the world is made of multiple cultures, and that culture makes the outcome of the political process far more problematic than is recognized by people who hold a rationalistic point of view.

Since current approaches to framing the ecological crisis are conditioning us to accept the rationalist approach to problem solving, they help to insure that the human dimensions of the crisis are never really understood at the deepest levels. The argument here is not against being rational; rather the main issue is an overly narrow view of the well-spring of human thought and behavior. The other problem with the rationalist approach is that it ignores how different cultural groups organize their way of understanding on fundamentally different assumptions and root metaphors; thus the human aspect of the ecological crisis is not simply a matter of people, societies, and nation states—those misleading metaphors of Western colonialism—but of cultural differences that cannot be easily reconciled or changed by using a political process based on the Western forms of rationalism so evident in environmental reports. The cross-cultural dimensions of the ecological crisis, while exceedingly important and complicated, are not however the main focus of this work.

Our main concern here is with the middle class culture which exerts such a dominant influence in American society, and with how the belief system of this group, which underlies so many environmentally disruptive practices, is perpetuated in the public schools and universities. Pronouncements on the necessity of other cultural groups' changing their environmentally destructive practices may help inflate our moral sense of superiority and bolster our self-image as ecologically responsible citizens. But as largely ritual behavior this diverts attention from the part of the problem that we can actually do something about. Directing our energies to bringing our own society's dominant culture into closer balance with the long-term sustaining capacities of our own environment is justified because we, along with the other Western industrialized, consumer-oriented societies, are major con-

tributors to the problem. The technologies that support our life styles deplete nonrenewable resources and contribute to multiple forms of pollution on a scale vastly disproportionate to our percentage of the world population.

Focusing on our own situation should not, however, be taken to mean that what other cultures do about their relationship is no concern of ours. If we have learned anything in recent years it is that the ecosystems of the planet are interactive with each other. Thus, destroying the forests in one part of the world ultimately will have an influence on the precipitation patterns and changes in soil conditions in other parts of the world. Overproduction of food grains in our country, which involve the use of techniques damaging to our water supplies and soil, alter the economics in other countries with more marginal soils—forcing them to adopt even more disruptive practices. Other examples of the interactive nature of human practices and ecosystems could easily be cited. But the most immediate challenge is to address at the level of formal education our own disruptive cultural patterns—while keeping an eye on the influence that our practices and policies have on the manner in which other cultural groups use the world's commons of soil, oceans, forests, and atmosphere.

In recent years a wide variety of groups have taken on the mission of changing attitudes and social practices relating to the environment. They range from environmentalists who argue for a more responsible form of stewardship of the environment to advocates of "deep ecology." The latter is more an umbrella term covering a wide array of groups who view the ecological crisis as raising fundamental questions about our belief and value systems. The more serious "deep ecology" thinkers, such as Arne Naess, Warwick Fox, and Alan Drengson, have attempted to articulate the philosophical basis for an ecologically grounded view of self. But the American tendency toward syncretism is fully evident in the attempts of others to find the path to an ecologically enlightened form of existence in such diverse traditions as Taoism, Buddhism, libertarianism, feminist spirituality, communitarianism, Greek mythology, Christianity, Shamanistic cultures, and so forth. Often the impression is left that the pathway to ecological balance is in embracing as many of these traditions as possible.

Though somewhat less ebullient about the transformation of consciousness, the Greens are perhaps the most important social and political movement to have emerged in response to the growing deterioration of our habitat. The Greens in North America share the more comprehensive political agenda that has made them so highly visible in Western Europe and Australia. As the following statement makes plain, they see the need for a complete restructuring of society to restore the system to a smaller scale where the skills, interests, and responsibility of the individual matters again. To quote from the position paper of the Green Party of the Federal Republic of Germany:

A complete restructuring of our current near-sighted planning is necessary. We consider it mistaken to believe that our present spendthrift economy can still promote human happiness and the fulfillment of life goals. Just the opposite occurs. People have become more harried and less free. Only to the extent that we free ourselves from an overdependency on a materialistic standard of life, and make individual self-realization possible again, and recognize the limits of our own inner nature, will our creative powers be able to free themselves to form life anew on an ecological basis.³

Their concern with participative involvement, nonhierarchical social structures, and an ecologically and socially oriented economy, to cite just a few of their proposals for changing the basic direction of Western modernization, also involves specific proposals for changes in education. The organization of schools and a curriculum that fosters class divisions and stratified bodies of knowledge essential to furthering a technocratic society are specifically rejected.

They propose that the old competitively based model of education be replaced by an approach to education that emphasizes the following content:

- practical training for both teachers and students in handicrafts, industry, and agriculture, in order to reduce the gap between education and the working world.
- school children able to learn outside of the school, and real life situations brought into the schools. The separa-

tion between school time and leisure time must be eliminated. Music, theater, painting, work and play, all must find their place in the school.

- the encouragement of thinking in terms of interrelated systems as the ongoing goal of teaching, in order to encourage a better understanding of social interrelations, ecological cycles, and prevailing contradictions. The school should be able to train the student to recognize the interests which lie behind social and personal conflicts. They should be taught to solve conflicts peacefully between people, to formulate their own concerns, and, together with others, to find effective ways of expressing these interests.*

Beyond the environmentalists' recommendations on the importance of teaching recycling in schools and avoiding hazardous waste, as well as other common-sense practices that accompany the annual "Earth Day" observances, the Greens are one of the few groups to address the problem of educational reform from an ecological perspective. With the exception of their recommendation that students be taught to think in terms of interrelated systems, their proposals, however, appear to be little more than the restatement of much of the educational thinking of the 1960s, with its emphasis on individual self-realization in an open, nonauthoritarian classroom. The Greens' more coherent vision of how different aspects of society—work and technology, energy, agriculture, zoning and community development, education, and so forth—must be reorganized in order to decentralize decision making, and to replace the traditional anthropocentrism with biocentrism, reframes the goals to be served by these educational reforms.

But the orientation of the Greens, like the ideological traditions on which they draw so heavily, reflects the contradictions and tensions of these earlier ways of thinking—as well as their silences. The Greens' ideal of personal autonomy and their view of the nature of freedom raise questions about how these traditional political ideals are to be reconciled with the Greens' nonanthropocentric view of the human relationship to the natural world. Whether the other aspects of their political agenda for transforming a technocratically oriented society into cooperatively based, small-

scale communities can be attained through the democratic process is also problematic. But the aspect of their thinking, as well as that of the environmentalists and most deep ecologists, that is of most concern here is the failure to consider the influence culture has on human thought and behavior.

Technology, profits, competition, multinational corporations, Taoism, and feminist spirituality are all aspects of culture. In fact, anything that humans do, including those activities and artifacts that survive over time, can be understood as representing the influence of culture. Because it is so encompassing, varied in its expression, and formative in its influence, culture is less amenable to the political process than the Greens and other environmentally conscious groups recognize. This does not mean that culture and the political process can ever be domains of human activity distinct from each other: the forms of politics are also grounded in cultural patterns and codes. And the political process—if it leads to change—involves changes within other dimensions of the culture. Recent political change brought about by the feminist movement demonstrates this point. But the lack of specific focus on the cultural aspects of the ecological crisis seems to limit remedial action to those political arenas where disagreements rooted in economic interests and ideological differences have made change exceedingly difficult and slow. Witness the time it takes to enact environmental legislation, and the compromises that must be made.

Attempts to maintain a sustainable habitat through the political process—whether in the form of demonstrations, working in the hallways and committee rooms of the legislature, or spiking trees—effectively preclude utilizing the full potential of the classroom to help ameliorate the crisis. There is no single cause for any aspect of the ecological crisis, but there are complex and interconnected cultural patterns, beliefs, and values that collectively help to introduce perturbations into ecosystems, causing them to go into decline. To put this another way, there is no single cultural cause for cutting old growth forests in the Northwest or for engineering automobiles as status symbols rather than for fuel efficiency. Practices and beliefs far from the scene of the ecological crime—so to speak—are contributing through often invisible vectors; for example, our attitudes toward packaging and reading newspapers have something to do

with cutting old growth forests. It is not simply a matter of capitalism, as some extremists might argue.

The changes in some practices—like dumping toxic wastes, deforestation, depleting fisheries, and losing topsoil and ground water—require immediate attention, and this will mean utilizing the political process to enact legislation. Attempting to effect changes in these areas through the long-term process of educationally guided cultural changes would be too slow a process. But the long-term aspects of learning to live in ecological balance also require giving attention to those aspects of culture that will have an influence on the taken-for-granted beliefs, values, and social practices that people will hold in the future. To use the ongoing feminist movement as an example, it is possible to see how direct political action is being translated into legislation, and how the more long-term cultural adjustments are being worked out in the context of the classrooms as students learn to think about work in less gender-biased language and engage in other behavioral patterns that treat people on a more equitable basis. The two processes—political and educational—are going on simultaneously; while they complement each other, the processes have distinct characteristics that must be taken into account.

To consider the broader and longer-term process of bringing mainstream culture into a sustainable balance with the habitat, it is necessary that the complexity of culture must be recognized as well as why it is so difficult to be aware of this complexity. Rather than fit the discussion of how educators should respond to the ecological crisis into the controversial frameworks of the deep ecologists, Greens, and environmentalists—whose disagreements can become excuses for others' indifference—I want to propose a different approach. The focus on culture, which is the medium of the classroom, allows for more educators to become involved, and at different levels. It also addresses the symbolic dimensions of a long-term solution—which has to do with the cultural patterns, beliefs, and values that will be part of the taken-for-granted attitudes of future generations. Before we take up the more direct educational implications of this approach, it is necessary to focus more directly on the nature of culture itself and on why certain aspects of the dominant Western culture have made the formative influ-

ence of culture even more difficult to recognize. Although public school and university education, in both their curricular content and their patterns of teaching, are cultural processes, we have not really understood the special educational issues raised by the culture-language-thought connection. One of the reasons for this is connected with the specific cultural pattern of thinking now being brought into question by the ecological crisis. Thus, a deeper understanding of culture, as well as the specific cultural patterns now being recognized as problematic, may also help guide us toward a more ecologically responsive approach to public school and university education.

Clifford Geertz's definition of culture provides a good starting point for illuminating one of the reasons culture is so difficult to recognize. The other reason, which has to do with the specific set of beliefs and assumptions that has had a privileged position in Western thought for nearly 400 years, will be taken up later. For Geertz, culture can be understood as the shared patterns that set the "tone, character, and quality" of people's lives—ranging from what is viewed as food, how it is prepared and eaten, to the categories used to understand the world and the human beings placed in it. The following explanation by Geertz points to the pervasive nature of culture in human experience: "Culture patterns—religious, philosophical, aesthetic, scientific, ideological—are 'programs'; they provide a template or blueprint for the organization of social and psychological processes, much as genetic systems provide such a template for the organization of organic processes."⁵ Of course, we must recognize here that Geertz is representing culture in a highly metaphorical manner; unlike the chemical code of a gene that regulates the form that life will take, the culture that provides the patterns guiding human experience can be partly understood at the explicit level of awareness and changed as a result of thought—which may even include changes based on misconceptions. But the key point in Geertz's explanation is that the patterns that make up a culture are the largely invisible yet always present sources of authority in people's lives. Even the power of rational thought and creativity are expressed in terms of culturally shared patterns.

This brings us to a second critically important feature of culture, namely, that the patterns used by people as the

basis for their experience—which range from the body's message system for communicating interpersonal relationships to the categories used to organize thought—are experienced as part of the person's natural attitudes. A way of understanding a person's attitudes is to view them as what the person takes for granted in experience. As we are here identifying an aspect of culturally based experience of which by definition, we are not aware, it may be useful to cite examples that we can recognize as the taken-for-granted foundations of our own experience. The practice of associating "up" with good and "down" with bad, adjusting interpersonal spatial distance according to social context and status relationships, designing a house, and deciding who is included in our family and community are just a few examples from the everyday world. Patterns of belief and of social interaction that are felt as immutable may be problematic in fact, as when cultural patterns of the early European explorers led them to view the New World as an economic resource to be staked out for exploitation. More recently, we have witnessed the damaging effects of technological innovations that were not anticipated because of fundamental attitudes about the progressive and ameliorative nature of new technologies. Beliefs and social practices may take a positive form, like the patterns we follow in successfully interacting with others, driving a car, and hiking on a mountain trail. It is not the unexamined nature of cultural patterns that is the problem, but the patterns themselves. The invisible nature of cultural patterns becomes a problem only when they are the source of undesirable consequences, like the cultural practice of designing automobiles to require greater use of air conditioning that results in the release of ozone-damaging chemicals into the atmosphere.

There is another dimension of given patterns that needs to be recognized. The patterns we unconsciously re-enact can be understood as lived traditions. That is, the cultural patterns—ranging from what is viewed as constituting wealth, how we organize and use space, to our sense of time, to identify just a few examples—represent past forms of understanding that have been encoded in the patterns that underlie current experience. As other members of our cultural group share these patterns of encoded knowledge, meaningful communication and social interaction is possi-

ble. If all these patterns were made explicit, judged, and improvised on a purely individualistic basis, communication would become impossible. In effect, making explicit all patterns, if it were possible, would contribute to a condition of nihilism where the authority of traditional patterns would be relativized, and values and commitment would vary in accordance with personal opinion. The critical issue here, related to Geertz's view of cultural patterns, is that even the person who is questioning all forms of authority in people's lives is being unconsciously influenced (even driven?) by cultural patterns. But this does not mean that all cultural patterns evolve in a way whereby only existentially meaningful and socially useful traditions are preserved and the outmoded ones are made explicit and so reconstituted in a way that in turn becomes the basis of experience for the next generation. There are also cultural patterns that continue to have authority in our lives even though they threaten our existence over the long-term.

For example, the distinctive set of beliefs that many people in the dominant culture associate with progress and modernity fosters mental habits particularly unsuited for recognizing either implicitly assumed beliefs or evidence that challenges the idea that change is inherently progressive. These beliefs, born in a period of self-conscious emancipation from what was viewed as the "Dark Ages," were seen as the basis of human empowerment: in overcoming illness and death, the drudgery of work, the suppression of human freedom, and the barriers to material success. The partial fulfillment of the promise has not been entirely illusory, but the essential core of these beliefs evolved in a way that lost touch with the realities of an environment that has natural limits. To make this point in a different way, the hubris of this mind set assumed that environmental limits could be transcended through the resourcefulness of human rationality.

Key aspects of this belief system still provide a basis for understanding the implications of the changes taking place in the environment. A culturally specific view of individualism, of the rational, and of the nature of language can be traced directly to the seventeenth- and eighteenth-century thinkers who laid the conceptual foundations for the evolution of modern Western consciousness. While often disagreeing on important issues relating to the nature and

source of ideas, the founding fathers of modern consciousness left a distinct and still obvious legacy. John Locke (1632–1704) helped to establish the primacy of the individual by arguing that the individual is to be understood as existing prior to society: that is, as a biological entity living in a “state of nature.” Membership in society came about as a result of the realization that the self-interest of the individual could not be pursued on a more rational (predictable) basis in the state of nature where there was no third party who could adjudicate disputes.

René Descartes (1596–1650) also started with the individual who, through a process of radical doubt, supposedly is then able to exercise a form of rationality free of the influence of both tradition and culture. Descartes’ formulation of thought as an inner mental process helped establish today’s dualisms of mind and body and of thought and nature. The contemporary understanding of objective knowledge, procedural thinking, and the reduction of a thing or process to its smallest components also have their roots in Descartes’ epistemology.

Ernst Cassirer, in summarizing the influence of Descartes on subsequent Enlightenment thinkers, observed that “reason is now looked upon rather as an acquisition than a heritage. It is not the treasury of the mind in which truth like a minted coin lies stored; it is rather the original intellectual force which guides the discovery and determination of truth.”⁶ Furthermore, as the rational process was considered to be everywhere the same, involving a particular relationship between reflection and sense data, there was no need to account for cultural differences. The idea that language might encode the thought patterns of a cultural group, thus influencing the “rational process,” was likewise unimaginable to these early founders of modern consciousness.

In the course of our discussion, the terms “Cartesianism” and the “Enlightenment” will be used as a means of identifying the historical and cultural origins of ideas and values that now tend to be associated with a universal form of modernism. “Cartesianism” will be used when referring to those aspects of modern consciousness that can most directly be traced back to Descartes’ mode of thinking, with its dualisms and linear procedures of thinking. Although Descartes’ legacy

has undergone important modifications, we are still, at the deepest level of our thought process, Cartesian thinkers. This can most easily be seen in the curriculum and the teaching styles that characterize the educational process from the early grades through graduate school.

The term "Enlightenment" will be used to designate the somewhat later emphasis given to the authority of reason in guiding people's lives, the belief in the inevitability of progress and, as Alexander Pope so succinctly put it, the belief that "the proper study of mankind is man." The two traditions represent a distinct cultural pathway that now seems to be increasingly problematic. Our task will be to illuminate how current interpretations of key ideas, assumptions, and values associated with modern consciousness are putting us in a double-bind, particularly in our response to the ecological crisis.

Currently, the way individualism is understood within the dominant culture varies in terms of the past socialization of different subgroups. Academics and technical experts who write on environmental issues would tend to emphasize a different, though not incompatible, set of attributes; for them, individualism would be more associated with rational self-determination than the expressive form of individualism to which many other groups subscribe. Keeping in mind that "individualism" is a metaphor that encodes different peoples' various associations, examples, and analogues of what it means to be an individual, it seems safe to say that individualism is generally associated with the idea of freedom. But "freedom" is also a metaphor that encodes different schemas of understanding, depending upon the historically formative analogues. But the most powerful analogue, which is that of the autonomous individual, suggests that freedom is a matter of choosing one's own values, one's self-identity, and future. Within the cultural mainstream, differences seem to arise more in terms of how to achieve the fullest expression of individual freedom, rather than over the deeper questions associated with freedom itself. Some argue that rationality is the basis of individual authority while others argue for a more emotive basis of individual authenticity.

In *Habits of the Heart*, Robert Bellah and his colleagues write eloquently about the consequences of making the individual self the basic social unit, and question whether this

modern image, cut off from communal involvement and responsibility, can sustain either a meaningful public or private life.⁷ But there are other consequences of this view of individualism that relate more to the foundations of the myth of the autonomous, self-directing individual. One consequence is that thinking of self as an autonomous individual hides the multiple dependencies upon patterns of thinking, use of technologies, and reenactment of social conventions that have been handed down from the past. To put this another way, the current image of individualism (which Edward Shils points out as being part of a Western tradition of thought) disconnects the "individual" from tradition at the level of self-understanding. But as the wheel of thought does not always have to impinge on the road of everyday reality, individuals (in being absolutely dependent upon tradition for coping with every aspect of daily life) are left in a schizophrenic condition where their view of freedom contradicts their reenactment of traditional patterns and practices. For our purposes, the important point here is that the current image of individualism does not recognize the complex nature of tradition and the authority that it has in people's lives. This is, as we shall later see, a critically important issue in any serious discussion of the characteristics of an ecologically sustainable culture.

Another consequence of associating individualism with freedom is that it prevents a deeper awareness of the dimensions of experience as influenced by culture. As discussed earlier, the way cultural patterns are taken for granted and thus not part of the person's self-awareness, helps maintain the myth of individual autonomy. One aspect of culture put out of focus by the Western emphasis on the self-directed individual is how language, with its roots deep in the past, influences thought and behavior. Language can be understood as encoding the thought processes (actually, the mental ecology) of earlier stages in our cultural history. For example, thinking of the heart as a pump encodes the earlier assumptions about the mechanistic nature of the universe; thinking of North America as "the New World" encodes the privileged European perspective (many native peoples referred to the continent as "Turtle Island"); and thinking of creativity as an original act of the individual encodes assumptions that evolved along with the Western

view of modern art. What the current view of individualism obscures is that language provides the important schemata or conceptual frameworks that guide the thought process of the individual. In effect, the patterns of individual thought are culturally rooted; while this means that there is far less original thought than is now proclaimed, it does not mean that thought is entirely determined by the encoding characteristics of language. As demonstrated here, it is possible to make the underlying patterns explicit and to reconceptualize them. This may lead to minor changes in the collective conceptual mapping process. Or, as attempts to shift away from the Cartesian mind set suggest, the changes may be more profound and reach deeper into levels of cultural practice.

This brief discussion of the relationship between language and thought, where language is more deterministic in direct relation to the individual's taking its cultural formulations for granted, is related to how the myth of individual autonomy contributes to thinking about personal responsibility. The conceptual schema (what we can now recognize as part of a culturally and historically specific way of thinking) that leads to thinking of self at the same time as both self-directing and the center of an autonomous rational and moral authority, undermines the sense of being interdependent with the larger social and biotic community. Responsibility is thus viewed in terms of self-interest; and if there is any awareness of living in an interdependent world it is likely to be viewed as an unwelcomed constraint on individual freedom. The discussion of language, tradition, and beliefs (which are all different aspects of the cultural milieu that makes human life possible) points to a basic fact that is not recognized by the modern form of consciousness: namely, that, as Gary Snyder points out, life involves participation in information and food networks.

The German philosopher Martin Heidegger argues that the dualisms that reflect Descartes' influence on Western consciousness not only include separating mind from body and the mind from the external world, but also a particular way of thinking about the world. According to Heidegger, the fundamental change in our way of thinking introduced by Descartes is to conceive and grasp the world as a picture.⁸ This sense of being an observer who can make separate and objective judgments strengthened other Western

cultural assumptions that extend even further back in time. One of these is the anthropocentric view of the world; that is, the world is to be understood and valued only from the perspective of human needs, interests, and sense of rationality. This positioning of "man" at the apex or center of the world, depending upon which tradition of Western thought you follow, has had the effect of privileging humans as superior to other life forms by virtue of their distinctive capabilities as rational beings.

But the form of rationalism we have created over the last four hundred years of industrial development in the West has problematic characteristics other than those related just to the spectator/anthropocentric way of understanding the "external" world. When compared with the patterns of thinking among traditional peoples, which have been described as consensual in that the members reflect and act within a shared overarching conceptual framework that recognizes many traditional forms of authority, the modern rationalist thinker can be more easily recognized as operating according to a different set of norms.⁹ Alvin Gouldner, the late political sociologist, has identified how these norms are based on a model that is individualistic and competitive. These norms or "rules of critical discourse" include: the justification of assertions, the use of evidence rather than the invoking of traditional forms of authority (those who represent the authority of tradition, sacred texts, communal memory, and so forth), the voluntary standing of listeners, and the competitive nature of the forum in which assertions are defended.¹⁰ In more popular terms we have referred to these norms as providing for John Stuart Mill's open marketplace of ideas, and as a competitive arena where truth emerges because of the preponderance of evidence—only to be challenged by alternative interpretations or the emergence of new evidence.

This view of the rational process, in being based on a competitive model that locates the authority in the rational process of individuals, rejects tacit and more contextually grounded forms of knowledge. In turn, the outcome of this more context-free form of thinking is viewed as the basis for making judgments that apply universally; that is, the outcome of this rational process is regarded as valid regardless of cultural context or time frame—until overturned by a newer way of understanding.