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## SHOPPING FOR SUSTAINABILITY: PSYCHOLOGICAL SOLUTIONS TO OVERCONSUMPTION

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In the wake of the September 11 terrorist attacks on the World Trade Center and the Pentagon, the world economy faltered. Nervous about the future, consumers and investors across the globe skittishly curtailed their spending, and the United States's Dow Jones industrial average wobbled and sagged. During the months that followed, daily news reports about economic indicators looked for hopeful signs of economic recovery—resumption of travel, consumer purchasing, and holiday extravagance—with newscasters and journalists clearly implying that a return to conspicuous consumption would indicate a resumption of emotional well-being.

Considering that the industrial world is characterized by its overconsumption of resources, I was surprised that not a single report that I read during the fall of 2001 mentioned the possibility that reduced spending might be a blessing in disguise for the sustainability of our planetary home. Not one report noted that our current levels of overconsumption jeopardize our future security. Yet even a cursory glance at the world's environmental predicament

clearly shows that the continued existence of our species requires that we find ways to lower our impact on the world's resources.

Depletion of the earth's resources is driven by conspicuous consumption. In 1966, less than a quarter of U.S. homes had an area exceeding 2,000 square feet; by 1994, 47% did (Myers, 2002). Although global averages of consumption have increased in the last 50 years, people in the industrialized world, particularly the United States, drive consumption dangerously beyond the planet's resource base. Since 1950, the world's richest 20% have doubled their consumption of meat and timber. The richest 20% now consume 85% of all paper. Between 1960 and 1997, the percentage of Americans who own dishwashers increased from 7 to 50; the percentage of people who own clothes dryers rose from 20 to 71; and the percentage of people who have air conditioning increased from 15 to 73 (Bureau of the Census, 1979, 1998, as cited by Myers, 2002).

In the industrialized world, we consume far more than our fair share of the planet's resources. We use 3 times as much freshwater, 10 times as much energy, and 19 times as much aluminum as people in industrializing countries, evidence that those of us in the richest countries have the greatest responsibility to find ways to convert our consumer economy to a sustainable one. We must convert because our current consumption levels are clearly unsustainable. Either we find ways to change our abuse of the planet's resources, or weather catastrophes, disease, war, and starvation will do it for us.

In this chapter, I describe important examples of our unsustainable resource use, focusing on some examples of everyday overconsumption behaviors that drive our environmental crisis. I then go on to suggest some ways that psychologists might promote changes in consumption behavior. My major claim is that reducing consumption is necessary for long-term sustainability. Psychology offers an array of concepts and tools for changing consumption behaviors, which will be a key task for psychologists of the 21st century (Oskamp, 2000).

## WORLD INDICATORS OF UNSUSTAINABLE HUMAN CONSUMPTION

Human beings are currently on a crash course. Our present levels of consumption, pollution, and population growth are quickly eating up the Earth's carrying capacity (the maximum number of individuals that a given environment can support long-term), making our future existence problematic, if not improbable. To live on the planet, humans depend on a stable climate, protection from lethal solar radiation, clean air and water, and a continuous supply of natural resources, including soil, water, minerals, and organic materials. A large body of evidence suggests that modern human behavior threatens each of these life-sustaining resources. Industrialization,

and the daily human behaviors that come with it, have already seriously affected climate change, deforestation, water supplies, and land use.

## Climate Change

When I sit in my car tomorrow morning and drive to work, I will contribute to global warming by depositing excess carbon emissions into the atmosphere. Global warming is already well underway. The average temperature of the Earth's surface rose from 13.27°C in 1866, to 13.84°C in 1950, to 14.35°C in 1999 (Dunn, 2000b). The burning of fossil fuels, which contributes to global warming, has soared from 1.6 billion tons in 1950 to 6.3 billion tons in 1998 (Dunn, 2000a). Meanwhile, atmospheric concentration of carbon dioxide has grown steadily since 1958, especially from the burning of fossil fuels.

The warmest 23 years on record have occurred since 1975. Global warming will continue to cause sea levels to rise because of thermal expansion and glacial melting. These rises threaten coastal regions, make cropland unusable, and could displace millions of people (Flavin & Dunn, 1999). Floods, hurricanes, and storms will increase, as will droughts and desertification. Overspending the planet's fossil fuels on increased production of consumer goods will also lower production in the future (Flavin & Dunn). Already fish harvests went down sharply in 1998 as a result of unusual weather patterns and over-fishing (Gardner, 2000).

Our everyday behaviors cause dangerous patterns of pollution, resource depletion, and climate change. In addition to driving a car almost every day, I recently took three airline trips to professional meetings. Airline transportation is the most fuel-inefficient way to travel. Transportation choices contribute greatly to pollution, global warming, and resource depletion because 95% of it is fueled by oil and its various derivatives (gasoline, including diesel fuel, jet fuel, and so on). Globally, transportation is the fastest growing source of carbon emissions (Sheehan, 2001). Citizens of the United States travel twice as far as Europeans, using 18 barrels of oil per person per year in comparison to Canadians, who use 13, and Japanese, Australians, and New Zealanders, who use an average of 6. With the increasing motorization of the world, per capita car use continues to rise. In 2001, we drove 10 times as many cars as we did in 1950. Car ownership is already very high in the industrialized world, but it will grow more rapidly in the developing world, where it is seen as one of the first signs of emerging prosperity. Per capita motorization is expected to more than double between 1997 and 2020 (Sheehan). Of particular concern is the surging demand in developing areas of Asia and Latin America, where rapid industrialization will increase the demand for oil at 2 to 3 times the rate of industrialized countries. The rate of fuel consumption in China and India is expected to rise by 3.8% each year.

(Sheehan). However, the United States alone uses more than one third of the world's transport energy (Sheehan).

Meanwhile, globally we use well over 20 times the energy per year that we used in 1900. We have gone from using 911 million tons of oil equivalent per year to well over 9,600 million tons (Klare, 1999). Perhaps a blessing in terms of carbon emissions and global warming, at current rates of consumption, the world's oil supply is diminishing rapidly; the last 20% of it will be the most expensive to extract and process. International tensions and military actions are likely to increase as limited supplies are exhausted (Homer-Dixon, 1991). Indeed, U.S. military intervention in Afghanistan and Iraq are not irrelevant to the world's largest untapped deposits of oil located near the Caspian Sea; in the late 1990s the U.S. State Department supported the Taliban, along with plans by Unical Oil Co., to build a pipeline through Afghanistan and Pakistan (Rashid, 2000), and as the United States threatened Iraq with military invasion in the fall of 2002, oil companies were lining up to design installations on the oil fields between Iraq and Kuwait (Morgan & Ottaway, 2002).

### Deforestation

Consumer activities are killing the world's forests. Harvesting, development, and fuel gathering have already destroyed approximately four fifths of the world's original forest cover. Globally, the destruction of forests increased dramatically between 1960 and 1990, particularly in the tropics, where forests were cleared to provide land for agriculture, livestock, and human communities. Large-scale logging for both timber and paper pose a major threat to the world's forests (Abramovitz, 1998).

Deforestation is particularly dangerous to the planet's ecosystem because forests produce oxygen while absorbing harmful CO<sub>2</sub> emissions. Deforestation interacts with global warming to generate changed weather patterns, flooding, landslides, and clogging of waterways (Abramovitz & Mattoon, 1999). In addition, forests house important biodiversity, sheltering a majority of the Earth's plant and animal species; deforestation causes great loss of the world's genetic endowment. The relative consequences of commercial logging, fuel wood gathering, agriculture, and development on deforestation remain unknown. However, the impact of logging is often underestimated because of its secondary effect on road building, flooding, and damage to other parts of the ecosystem.

Contrary to the digital revolution's promise of a paperless society, paper use has increased more than sixfold since 1950. In general, richer countries use more paper. With close to 22% of the world's population, the United States, Japan, and now China use more than 71% of the world's paper (Mattoon, 2000). Only about 10% of paper goes into making long-lasting products like

books; as of 1997, almost half of the world's paper has been used for packaging. Virgin wood fiber made up 55% of the world's fiber supply, one fifth of the world's total wood harvest. In addition, paper made up a large proportion of municipal solid waste, about 40% in industrial countries (Mattoon).

Like transportation, daily human behaviors drive deforestation. To write this chapter, I depended on paper for manuscript drafts as well as the newspapers, journals, and books on which it is based. Most people use paper only once. Although recycling has increased dramatically in the last decade, recycled paper contributes less than 40% to total fiber supply (Mattoon, 2000). Meanwhile, excessive paper use continues to grow. The average U.S. household receives 553 pieces of junk mail each year, a figure that is expected to triple by the year 2010. In the United States, nearly 10 billion mail-order catalogs are discarded each year (Abramovitz & Mattoon, 1999).

Our gluttonous use of paper stems partly from inappropriate pricing mechanisms. Paper is often cheaper than its real cost because the supply of paper often outpaces demand. When new mills get financed, owners must run them constantly to pay off debt; this oversupply of paper causes prices to fall and encourages people to use paper for trivial matters (Abramovitz & Mattoon, 1999). Consequently, those of us in the industrialized world become increasingly annoyed by mounting piles of paper while our forests continue to be depleted.

## Clean Water

Although water covers most of the Earth's surface, only 3% of it is usable—the rest is frozen, salty, or inaccessible. Unfortunately, the small amount of usable water is deteriorating quickly as pollution from industrialization accelerates. The capacity of groundwater to sustain people and ecosystems is under grave threat, as massive quantities of chemicals are sent into the earth, poisoning the aquifers and causing irreversible damage. The major culprits are pesticides and fertilizers that run off from farms and lawns, petrochemicals that leak from faulty storage tanks, chlorinated solvents and heavy metals from industrial trash, and nuclear contaminants from energy and weapons production. Although most of the pollution is unintentional, 60% of the hazardous waste in the United States is disposed of by injecting it into deep underground wells, and evidence of waste seepage into drinking water supplies has been documented in parts of Florida, Ohio, Oklahoma, and Texas (Sampat, 2000). Chemical pollution of aquifers is long lasting—1,400 years—compared to 16 days for river water (Sampat, 2000); in the Columbia basin of Washington state the radioactive waste that has leaked into the Central Columbia Plateau Aquifer has a half-life of 250,000 years (Sampat, 2001). By the mid-1990s nearly 60% of wells sampled in agricultural areas of the United States contained pesticides (Sampat, 2001).

In the last 30 years, demand for groundwater expanded dramatically and the world's use of water tripled (Brown, 2000). Two thirds of the freshwater used goes to irrigation to grow about 40% of our food. However, because water use in industry produces about 70 times as much profit as that used for agriculture, industrial use of water is expected to continue growing quickly beyond its current 22% (Sampat, 2001). Between industrial and agricultural uses, freshwater aquifers are being depleted quickly, resulting in a current worldwide water deficit of an estimated 200 billion cubic meters a year. In other words, 200 billion cubic meters are currently being withdrawn from aquifers without being restored (Sampat, 2001). Over-pumping of aquifers in China, the United States, North Africa, India, and Saudi Arabia exceeds 160 billion tons of water per year (Brown). Between population growth and increased consumption, the number of people living in water deficit countries will jump from 505 million in 2001 to over 2.4 billion in the next 25 years (Flavin, 2001).

Although household use accounts for only 12% of freshwater depletion, daily behaviors of people in industrialized countries indirectly threaten the world's freshwater supply through overconsumption of industry-produced products, packaging, and irrigated food. Thus consumers bear responsibility for major depletion of water levels through their product choices. Meat consumption takes a particularly large toll on the world's water supply: Each calorie from meat consumed takes 7 times the energy required to produce one calorie from grain. Moreover, because grain is irrigated to grow cattle feed, water is essentially wasted and contaminated to produce meat (Kiebel & Jacobsen, 2002).

### Loss of Soil and Agricultural Land

As water tables fall, so does the amount of land available for agricultural production. The amount of arable land peaked in 1981 and has since decreased 6% (Oskamp, 2000). The major culprits are degradation from erosion and salinization, as well as development of human settlements. Worldwide, grain harvest area fell by 647 million hectares in 1999, leaving us with the smallest area since 1972 (Gardner, 2000). As global population continues to climb, harvest area per person continues to fall: As of 2000, the planet had only .11 hectare per person, one third less than that of 1972. Land degradation decreases agricultural productivity in many parts of the world. For instance, in China soil erosion and desertification has ruined as much cropland as has urbanization and rural construction. Over-irrigation has salinized and desertified parts of the United States, particularly Oklahoma.

Consumers contribute to loss of agricultural land in at least two ways: (a) by supporting unsustainable farming practices when they purchase food grown in unsustainable ways and (b) by not participating in community decision-making about how agricultural lands should be designated. When citizens who care about sustainable agriculture are not involved in local plan-

ning, decisions get made by real estate developers, local contractors, and others who stand to gain financially from excessive sprawl.

## Summary

Unsustainable human behaviors destroy water, land, forests, and energy reserves throughout the world. Similar pictures of ecological decline could be drawn for air pollution, mineral depletion, and loss of biodiversity. By now the global predicament should be clear. In the words of the World Scientists' Warning to Humanity, signed by 1,600 eminent scientists across the globe in 1992:

A great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated. (Union of Concerned Scientists, 1992)

Although the intersecting problems of diminishing water, land and forests, combined with overpopulation and global warming, seem overwhelming, Brown (2000) reminded us of the need for, and plausibility of, sudden social change. Just as scientific thought has undergone sudden shifts of paradigms (Kuhn, 1962), so has the modern social world seen abrupt shifts in attitude and practice. For example, the political systems of eastern Europe underwent rapid and massive changes in the 1990s. Political scientists did not anticipate the unprecedented change in practice and thinking that enabled most countries to reorganize their economies and political structures through bloodless revolutions. Settlements of tobacco lawsuits provide another example. After decades of denying the health impacts of cigarettes, U.S. tobacco companies agreed to massive financial settlements with 46 states. This sudden and radical change in policy has had both environmental and health benefits.

Other evidence suggests that the world community may be ready to change its consumption levels. For example, Shell Oil and DaimlerChrysler are leading a consortium of corporations that will enable Iceland to become the world's first hydrogen-based economy. In the United States, forest practices swiftly changed in the late 1990s to emphasize selective rather than clear cutting; road building for logging was put suddenly on moratorium. Brown (2000) argued that pulling ourselves out of our ecological predicament would require that we stabilize both population and climate change and that we use taxes to reorganize the world economy to promote these two key aspects of environmental sustainability. Although I agree that taxes are crucial, I doubt that government leaders currently have the wisdom and fortitude to enact appropriate tax structures without massive public appreciation for them. Thus, economists have an important role to play in building a sustainable society, but so do psychologists.

## CAN PSYCHOLOGY HELP SAVE THE WORLD?

Most people think that environmental problems lie outside the domain of psychology; pollution, resource depletion, and overconsumption are usually seen as engineering issues to be addressed by environmental biologists, chemists, geologists, physicists, or economists. Although psychology is rarely thought to be relevant, I argue that it is crucial for our survival because our environmental crisis has been brought on largely by the thoughts, feelings, attitudes, values, and behaviors of human beings. Clearly, technological solutions will not help unless they change human behavior. Sooner or later, psychologists must play an integral role in designing sustainable cultures (see chaps. 2, 4, 6, & 8, this volume), and I hope that this book encourages more psychologists to accept this important challenge. Below I discuss a handful of the ways in which insights from psychology might be used to help reverse our dangerous levels of consumption.

There are many different psychological approaches to the question of how to foster sustainability (Gardner & Stern, 1996; Howard, 2000; McKenzie-Mohr, 2000). My own approach is to examine big theories in psychology for insights into our environmentally destructive behavior. I like the theoretical approach because I hope it stimulates the imaginations of many people, recruiting them (you!) to work on these problems. The following ideas are in no way exhaustive, and I offer them to begin a conversation about how psychology might contribute to the crucial task of curbing consumption and cultivating environmentally responsible behavior. (For expanded versions of much of the following discussion, see Winter, 1996; Winter & Koger, 2004; for a more condensed version, see Winter, 2000.)

### Neo-Analytic (Depth) Approaches

Neo-analytic theory derives from Freud's ideas about psychoanalysis. Although these approaches tend to receive less quantitative empirical attention than others, I find the insights they provide provocative for helping us think about how to change overconsumption behavior.

In neo-analytic terms, our environmental crisis results from our inherited alienation from nature. Freud was pessimistic about our ability to transcend our struggle with the natural world, whose forces he saw as evil. Written in the throes of the industrial revolution, his *Future of an Illusion* (1927) claimed that civilization is primarily a strategy to defend against nature. Later, Freud went on to propose that civilization can even be defined by the degree to which humans find ways to exploit and transform our natural environment.

From this perspective, our instinctive urges lead us unconsciously toward destruction. Eros, the sexual instinct, spurs us toward dangerous levels of overpopulation, and our aggressive urges (from the instinct *Thanatos*) lead us to militarization, war, and other forms of violent destruction.

Industrialization and urbanization exacerbate these instinctually based behaviors. Thus, uncontrolled instincts cause our species to reproduce and foud its nest with little conscious awareness of the consequences of our self-destructive behaviors.

We could not continue to exercise these environmentally damaging behaviors without a variety of defense mechanisms. Facing our perilous planetary predicament would bring us so much anxiety that we use defenses to remain unconscious about the possibility of our own extinction. So we continue to operate as if our dangerous behaviors are trivial, even though they are treacherous. For example, although most of us know something about the connection between global warming and fossil fuel use, we rationalize our inappropriate behaviors, supplying good-sounding but problematic explanations—driving alone to the office because “carpooling is inconvenient” or buying unneeded consumer goods because “they are on sale.” We exercise denial and displacement to keep our anxiety about our environmental predicament at bay: We busy ourselves with daily chores of work and family and quickly turn our attention away from disturbing environmental reports in the news as soon as we sense that doing something about them requires change in our behavior. We use emotional distancing techniques when we learn about environmental problems; for example, we believe that toxic waste is a problem for that community, not for ourselves individually; water depletion is a problem for those farmers, not for me; species extinction is trouble for other species, not for ours. Emotional distancing can also be observed by the commonly used phrase “radical environmentalist,” as if someone who takes environmental problems seriously is radical and cannot possibly use a reasoned approach, or as if those who are sensible would not rattle on about environmental problems. Thus, with the aid of defense mechanisms, we focus on short-term outcomes at the expense of future generations, because the anxiety we would experience otherwise would be overwhelming.

Unfortunately, governments and corporations collude with our individual defenses. For example, the U.S. government helps us suppress disturbing information about nuclear waste by intentionally hiding it (Gerber, 1992). Corporations use advertising to stimulate our consumer appetites without mentioning environmental costs (Durning, 1992); even colleges and universities support our emotional defenses by designing curricula that focus on the magnificent creations of human civilization without examining the diminishing physical resources that have been spent to produce them (Orr, 1992).

Our short-sighted and ineffectual relationship to nature might also result from damaged object relations (Buckley, 1986; Greenberg & Mitchell, 1983). From the neo-analytic perspective, our inability to consider the impact of our actions on our environmental home stems from a damaged relationship with our primary caretaker. We narcissistically think that “Mother Earth” will take care of us forever, or we do not address our relationship with the planet because we too easily feel despair or overwhelmed.

From the neo-analytic perspective, our salvation lies in transforming unconscious motivations into conscious awareness and action. Whereas Freud posited that libidinal impulses are the substance of the unconscious, ecopsychologists suggest that part of our deeply buried unconscious is the "ecological self," that part of us that realizes our profound connection with the ecological world (Bragg, 1996), but has been repressed by urban-industrial culture (Roszak, 1992). E. O. Wilson conceptualized the ecological self as biophilia, which he defined as "the innate tendency to focus on life and lifelike processes" (Wilson, 1984, p. 1). In other words, we have lost touch with this positive bond because of life in industrialized societies.

Some ecopsychologists have argued that advertising is most likely to seduce us into overconsumption when we do not connect with our ecological self, because our incomplete self craves definition and identity. By purchasing material objects we try to address this craving, but satisfaction of the deeper spiritual needs is fleeting (Kanner & Gomes, 1995). Indeed, recent empirical work shows that consumerism is correlated with anxiety and depression (Saunders & Munro, 2000; see also chaps. 2 & 3, this volume).

From this perspective, solving our environmental problems will require that we re-awaken the ecological unconscious through such techniques as practicing mindfulness (Sewell, 1995; see also chap. 7, this volume) and experiencing wilderness (Harper, 1995; Swanson, 2001), in addition to other forms of ecotherapy (Clinebell, 1996). Ecotherapy teaches people to be "nurtured by nature" by experiencing their profound love and connection with the natural world, as well as to "nurture nature" by realizing their commitments to behaviors that contribute to sustainability. Both the nurturing of and the nurturing by nature are reciprocal processes that can be used therapeutically to heal the split between the individual ego and the ecological world.

Because the neo-analytic and ecopsychological approaches attribute overconsumption to our emotional and spiritual difficulties, psychologists can contribute to building a sustainable world by encouraging people to face their feelings about our environmental crisis, by helping them to reconnect with their ecological selves, and by empowering them to take action on specific individual and political dimensions. As long as people refuse to feel their anxiety, despair, shame, or ecological connection, they remain unable to muster the psychic energy required to make necessary change; instead, their energy is exhausted defending against their feelings, thus robbing them of their full intelligence for finding creative solutions. The same defenses that keep us disconnected from the environment also keep us separated from ourselves and other people. When people are allowed to experience their feelings in safe settings, they are empowered to take positive actions on what otherwise would be overwhelming problems (Macy, 1983).

## Behavioral Approaches

Finding the ecological self and becoming aware of unconscious feelings may be valuable experiences, but sooner or later we need to translate our feelings of profound connection with the natural world into environmentally responsible behaviors. B. F. Skinner put it this way over a quarter of a century ago:

what we need is a technology of behavior. . . . Better contraceptives will control population only if people use them. . . . Overcrowding can be corrected only by inducing people not to crowd, and the environment will continue to deteriorate until polluting practices are abandoned. (Skinner, 1971, pp. 4-5)

From a behavioral perspective, a technology of behavior consists of identifying the situational stimuli that both accompany and reinforce environmentally relevant behavior. Geller (1987) outlined two main approaches: (a) stimulus control management, that is, changing the cues, models, requests, and instructions that precede behavior, and (b) contingency management, that is, changing the rewards and costs that follow behaviors. Much empirical research demonstrates the power of both of these strategies.

For example, using stimulus control management, Aronson and O'Leary (1982/83) had live models in a shower room demonstrate water conservation by turning off the water while soaping up; others in the same shower room followed. Requests to reduce litter are effective when they are posted (Geller, 1980); videotaped instructions have reduced energy consumption (Winett et al., 1982); and even clean garages have reduced littering (Cialdini, Kallgren, & Reno, 1991).

Many more studies have used reinforcement to change environmentally relevant behaviors. Monetary rebates, raffle tickets, and cookies have been used to change behaviors such as riding buses (Everett, Hayward, & Meyers, 1974), cleaning up litter (Powers, Osborne, & Anderson, 1973), and setting thermostats for lower energy use (Walker, 1979). Evidence also suggests that feedback about behavior is a valuable reinforcer; behaviors changed in appropriate directions when researchers posted the speed limit for drivers (Van Houten, Nau, & Marini, 1980) and gave readouts of electricity use to users (Winett et al., 1982).

Changing overconsumption behaviors is difficult in environments with frequent cues and models that encourage overconsumption, such as clearance sales, so-called "free miles" on airlines, and other programs designed to reduce the apparent costs of unnecessary consumption. Whenever so-called short-term reinforcers are more salient than long-term costs, the situation is ripe for what Hardin (1968) called the "tragedy of the commons" (p. 1244). Individuals continue to consume until a resource they share is exhausted, unless additional information, regulations, or moral

exhortations are provided. Laboratory games (Bell, Petersen, & Hautalaoma, 1989) have shown the difficulty people have in changing their behaviors for long-term sustainability when short-term contingencies support environmentally destructive behavior.

A behavioral approach would suggest that regulations and taxes would discourage overconsumption by appropriately rewarding and penalizing environmentally relevant purchasing behaviors. For example, the state of Oregon achieved 90% recycling of glass bottles after instituting a 5-cent refund on returns. The designation of a carpool lane reserved for automobiles with two or more passengers has successfully reduced automobile use. One intriguing suggestion is a progressive consumption tax that would tax not what people earn, but what they spend—that is, the difference between their earnings and their savings (Frank, 1999). Of course, the reinforcements for lawmakers have to be addressed before we can hope that such a sensible consumption tax policy might be adopted. As long as campaign finance is based on corporate donations, it is unlikely that lawmakers will be willing to enact tax laws that might hurt the short-term economic growth of industry, even though they would help the long-term health of society. From this perspective, the best way to insure public policies that address long-term environmental health is to change reinforcement contingencies of the lawmakers by changing the way campaigns are financed.

### Social Psychological Approaches

A couple of decades ago, one study found that the best predictor of whether people purchased solar equipment is the number of acquaintances they had who currently owned such equipment (Leonard-Barton, 1981). Environmental behavior is socially influenced. It is based on how people define a situation in socially meaningful terms. Other people's behaviors provide important information for appropriate action, and people frequently change their environmentally relevant behavior as a result of social diffusion—they do as others around them do (Leonard-Barton, 1981).

One of the greatest obstacles to changing consumption patterns is that overconsumption is normalized through observation of others. Excessive Christmas shopping, amassing credit card debt, and purchasing luxury vacations and products are commonly observed behaviors throughout the industrialized world that communicate to others that acting in these ways is "the way things are" and that such behavior is a product of human nature. Yet given the short clip of industrialized culture (100 years) in the longer span of human presence on the planet (1 million years), a moment's reflection shows that overconsumption is anything but a product of human nature.

One of the socially mediated reasons for overconsumption is probably social comparison (Festinger, 1954). Whether people feel good or bad depends on whom they are comparing themselves to (Marsh, Kong, & Han,

2000; Smith et al., 1996). Although most people in industrialized cultures ought to know their lives are endowed with extravagant wealth compared to earlier epochs of human existence, most people compare themselves with a small set of immediate peers and find something to make them feel less well-endowed. Consequently, most people mistakenly believe that they would be happier with a 20% increase in their income (Myers, 1993).

From a social psychological perspective then, reducing overconsumption depends on providing social environments in which overconsumption is viewed as silly, unethical, or obscene. During the 1960s, the middle-class American lifestyle (which included a home in the suburbs, car, swimming pool, etc.) appeared empty and immoral to many of the country's college students, who participated in a "counterculture" which denigrated materialism and instead celebrated emotional connection and expression. Today many of those college students, now middle-aged, own their own suburban homes, not to mention second homes and SUVs. The consumer culture has eclipsed the antimaterialist counterculture.

In the face of the dominant culture, an important strategy for helping people decrease their consumption is thus to provide comparison groups who value reduced consumption. The small but growing "voluntary simplicity" movement (Cairns, 1998; Elgin, 1993) offers cultural support for nonmaterialist choices and a lifestyle associated with more environmentally responsible behaviors, such as resisting impulse buying (Iwata, 1999). Web sites such as <http://www.simpleliving.net> and <http://www.newdream.org> are excellent resources for reducing consumption and connecting with others who share similar goals. The norm for what is environmentally acceptable may also be changing, as research on attitudes about environmental problems shows an increasingly widespread endorsement of pro-environmental values across age groups, socioeconomic classes, cultures, and countries (Dunlap & Mertig, 1995). Dunlap and Mertig demonstrated that public citizens, in both industrialized as well as industrializing nations, express increasing concern about damaged environments and their effects on health and increasingly endorse environmental protection. Perhaps we can hope that the ground is being prepared for a massive shift in public opinion, and eventually public policy, toward ecological, rather than economic, optimization.

### Cognitive Approaches

The cognitive approach stresses the importance of information and how it is framed or communicated. From this standpoint, changing our overconsumption behavior depends on changing people's perceptions and thoughts about environmental problems, because much of our overconsumption is driven by mindlessness (see chap. 7, this volume).

Although it might seem logical that education, from this perspective, is the key, many researchers have shown that information campaigns have

limited effects on environmentally relevant behavior (Howard, 2000; McKenzie-Mohr, 2000; Stern & Oskamp, 1987). Education campaigns fail more often when alternative behaviors are not apparent, are inconvenient, or are costly. Abstract knowledge about environmental problems does little to change behavior in any substantial way.

Nevertheless, recognition of environmental problems clearly depends on the way information is presented. Visibility is an important factor that governments and corporations clearly consider. For example, the U.S. Forest Service formally designed what they called *viewsheds*, that is, "area[s] with high visual sensitivity as seen from selected travel routes [which] are managed to attain and perpetuate an attractive, natural-appearing landscape" (1990, p. S29). In other words, they leave intact cosmetic strips of trees along highways in order to hide ugly clear-cuts stretching just beyond view. Similarly, visually compelling images like the Exxon-Valdez oil spill galvanized public opinion about environmental hazards in 1988, as did the phrase "[a] hole the size of a football in your living room wall," which provided people with a strong enough visual image to sign up for a home energy audit (Gonzales, Aronson, & Costanzo, 1988). If information is presented in visually compelling ways, we cognitively respond appropriately.

Some important roles to be played by cognitive psychologists in addressing overconsumption include studying public perception of consumption behaviors and finding ways to increase public recognition of the environmental crises brought on by these behaviors. For example, perhaps cognitive psychologists could work with companies to provide "green labels," whereby units of energy, freshwater, or forest fiber consumed would be listed for consumers, just as calories, fat grams, and fiber are now listed. Companies could promote their products with environmentally responsible statistics, and consumers would have a way of understanding the environmental implications of their consumer choices. Similarly, cognitive psychologists who have already been involved with risk assessment might help consumers understand the risks of manufacturing a product by providing risk information. Writing articles for *Consumer Reports* and other consumer guides could greatly enhance public awareness of the environmental damage that shopping promotes.

## CONCLUSION

Psychologists can play an important role in helping consumers become more informed and sophisticated about their environmentally destructive behaviors, in designing situations that support alternative behaviors, and in finding ways to support more responsible choices. Doing so requires psychologists to become better educated about the dangerous course of our present consumerist culture and to come to see the future of civilization on the planet as a key psychological problem to be solved. Although clinicians and scien-

tists need more technical information about specific environmental problems, they are already especially well-equipped to pose questions, make interventions, and work to modify environmentally relevant behaviors—in therapy sessions, in schools, in communities, and in consumer settings like shopping malls and grocery aisles. Moreover, because business, agriculture, and government institutions (including the military; Renner, 1991) use vastly more resources than do individual households (Stern, 2000), psychologists should also address the behavior of key decision-makers in larger social groups and agencies. Whether we begin by addressing feelings (from a neo-analytic perspective), environmental stimuli and contingencies (from a behavioral perspective), norms (from a social perspective), or information (from a cognitive perspective), it is important that we begin, and begin very soon.

From a psychological perspective, consumerism will never make a life more worthwhile than it otherwise would be. Research shows that personal happiness correlates not with income and material possessions, but with healthy relationships, with friends and family, with meaningful work, and with enough leisure time to enjoy them (Argyle, 1987; see also chaps. 2 & 3, this volume). In the words of global analyst Alan Durning, “[T]he very things that make life worth living, that give depth and bounty to human existence, are infinitely sustainable” (1991, p. 169). As we heal ourselves and the planet by finding ways to live less destructively on the Earth, by slowing down the mad rush for material consumption, and by participating in building a sustainable society, we will be improving the mental health of all of us. I can think of no other goal more worthy or more imperative.