Attitudes and Behaviors

Addressing human attitudes and behaviors is vital to achieving sustainability on a global scale. Scientists have shown conclusively that the behavior of humans has caused unprecedented changes to the earth's atmosphere. Achieving a sustainable planet that will meet current needs as well as those of future generations must involve changes in the habits and behaviors of individuals and communities, especially in the industrialized world.

The Impact of Behavior and Behavior Changes

Behavior—from personal consumption of resources to collective action on large-scale political and social issues—has a significant impact, whether negative or positive, on sustainability. Scientific evidence overwhelmingly points to carbon emissions caused by individual energy use as a leading cause of climate change; in fact, residential carbon emissions make up 18 percent of all US emissions (US Energy Information Administration 2011). By changing their selection and use of household and motor vehicle technologies, households can reduce energy consumption by almost 30 percent—about 11 percent of total US consumption (Dietz, Gardner, Gilligan, et al. 2009; Granade, Creyts, Derkach, et al. 2009). Although such changes in behavior do not require major economic sacrifices or a loss of comfort or well being, and can be accomplished almost immediately, actual conservation behavior is lagging significantly behind potential. Research has shown an interest among the US public in engaging in behaviors aimed at reducing human environmental impact, but the specific behaviors in which Americans overwhelmingly report engaging, such as turning off lights when leaving a room, have a minimal impact on energy savings as compared, for example, to reducing airplane trips (Attari, et al. 2010).

In the twenty-first century the public has gained a heightened environmental consciousness, which presents opportunities for people to engage collectively in activism. Together, people can strive for ecological citizenship, a way of living based on a commitment to social and environmental justice and reducing the negative impacts of one's life on others and the ecosystems on which we all depend. Many experts suggest that the changes needed for a sustainable future will require major changes at the institutional level;

collective action by citizens can persuade elected officials and large corporations to behave sustainably in order to maintain their positions or their company's reputation. The number of global companies that include sustainability indicators in annual reports more than doubled from 2010 to 2011 (Government and Accountability Institute 2012). This increase has been attributed largely to consumer and shareholder interest in such information; dozens of resolutions have been filed by shareholders asking for a higher visibility of sustainability issues. Likewise, citizens have lobbied public institutions at all levels (from local to international) for tighter restrictions protecting vulnerable populations, species, and ecosystems. This attitude shift presents what the United Nations refers to as the "possibility for a new era of economic growth, one that must be based on policies that sustain and expand the environmental resource base" (World Commission on Environment and Development 1987).

Risk Perception

Although scientists have pointed to the severe risks presented by unsustainable practices, the extent of actions taken by people the world over to counteract this risk remains extremely limited. A psychological approach helps to illuminate this seemingly irrational human behavior. Humans have evolved over thousands of years to respond to threat quickly and decisively; however, because the issues we are currently facing as a species do not trigger our threat systems, few individuals are responding. This is so for several reasons.

First, humans have evolved to respond to clear and present dangers presented by predators—threats that are visible, simple, and caused by an "other." To such threats a person's nervous system responds automatically. Complex, abstract issues like climate change and income inequality are not clear and immediately visible and thus are harder to perceive as threats. Second, the risks associated with unsustainable practices are removed from the daily lives of most people. Individuals experience four types of psychological distance, or the subjective experience of how close or far away something is: temporal (distance from now), spatial (distance from here), social (distance from me), and hypothetical (distance from certain) (Trope and Liberman 2010). People respond most quickly and effectively to information about immediate and certain consequences. The risks

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of climate change strike most people as temporally and spatially distant—affecting the future of other people in other places—and with little relevance to their current well-being; moreover, they may regard information about climate change as hypothetical. Conversely, they view the costs of changing consumption patterns to become more sustainable as certain, present, and individual.

Finally, we are motivated to believe what we want to believe. Research has shown that the perception of benefits derived from a behavior or technology can affect the perception of risk presented by that same behavior or technology; perception of benefits can also play an equal or greater role in determining acceptance and/or adoption of a particular behavior or technology (Starr 1969; Slovic 1987). For example, though most people perceive potential threats such as shark attacks, airplane accidents, and lightning strikes as a greater risk than driving a car, in fact driving cars poses a much more serious actual risk to the average person than the other three possibilities. Likewise, the benefits that people perceive from current behavior patterns present an additional barrier to appropriate cognitive appraisal of the risks they pose.

The Attitude–Behavior Relationship

Attitudes play a significant role in determining behaviors related to sustainability. Two social psychology approaches, rational (or individualistic) theories and moral (or altruistic) theories, have been tested for their utility in predicting and explaining such behaviors (Bamberg and Moser 2007). Rational theories focus on individuals' motivation to maximize benefits and minimize costs. Such theories, which consider the subjective character of utility and therefore the importance of individuals' beliefs, presume that individuals are naturally information-seeking and make purposeful, carefully considered decisions about how to behave based on anticipated costs and benefits of available options. For example, the theory of planned behavior (TPB; Ajzen 1991) asserts that behavior is largely influenced by behavioral intentions, which in turn are influenced by three types of beliefs: (1) behavioral beliefs (general appraisal of a behavior as favorable or unfavorable), (2) normative beliefs (perception of others' opinions about a behavior), and (3) control beliefs (beliefs about the ease or difficulty of performing the behavior).

Although rational self-interest may be a driving force in human behavior, altruistic motives are important determinants of sustainable behaviors as well. Because environmental issues generally involve the use of natural resources, which are both collective and limited, the optimal choice for the individual is often in direct conflict with the common interest. Because of this conflict,

altruistic or moral motives may account for many sustainable behaviors. The norm activation model (NAM; Schwartz 1977) has been widely utilized to understand this process. NAM stipulates that the activation of a "personal norm," or sense of moral obligation, influences pro-social behavior. Although NAM was originally applied to altruistic behavior toward other people, later work suggested that this concern for the well-being of others could and often did extend to nonhuman species and nature (Van Liere and Dunlap 1978). Personal norms have been found to explain many sustainable behaviors, including decreased meat consumption, recycling, and energy conservation.

Although this contrast between rational and moral approaches to understanding behavior has been a recurring theme in social science, it is important to acknowledge that the two are not mutually exclusive and that their integration can yield greater theoretical and explanatory value (Turaga, Howarth, and Borsuk 2010). Psychological variables that have been found to predict sustainable behaviors include those representing both a rational and a moral approach, such as concern about the environment, price consciousness, and both personal and social norms. The direction and strength of particular attitudes are also important. People may agree that sustainability is important for moral/altruistic reasons, but if sustainable behaviors conflict with attitudes or priorities related to self-interest (e.g., comfort, status), then the moral values may not be sufficient to change behaviors. For example, in the United States, survey research has shown that people do report concern for environmental sustainability, but that such concerns often rank lower than others related to the economy, health care, and terrorism (Leiserowitz 2008). In contrast, in many European countries, where individual and institutional changes are aligned with sustainability, the public shows greater concern for environmental sustainability issues.

Barriers to Sustainable Behavior

Attitudes, while important in predicting and influencing behavior, are clearly not enough to surmount individual and structural barriers to translating sustainable attitudes into behaviors. Individual barriers include insufficient time, money, or knowledge to engage in sustainable behaviors. If people cannot afford or are not aware of a specific behavior, then they are not likely to do it, even if they hold attitudes in favor of the behavior. Studies have found that sustainable behaviors are predicted by a variety of individual-level variables, such as age, home-ownership, income, education, family size, and home type (Karlin, Davis, Sanguinetti, et al. 2012). Social scientists have also identified habit as an individual-level

Sign announcing that the produce for sale is locally grown. Eating locally grown food is increasingly important to people as a way to reduce their carbon footprint. *(MShieldsPhotos/Alamy.)*

A theory known as the A-B-C (attitude-behavior-context) model (Guagnano, Stern, and Dietz 1995) posits that behavior is influenced by both attitudes and contextual factors and that the stronger one set of factors is in predicting behavior, the less force the other exerts. If there are sufficient contextual barriers to engaging in a behavior, then individuals are highly unlikely to engage in it, regardless of rational or altruistic attitudes toward the behavior. For example, a homeowner with a positive attitude toward energy efficiency may wish to insulate her home but be prevented from doing so by contextual factors, such as insufficient income to cover the cost. For such behaviors, interventions addressing contextual constraints (such as creating long-term financing of insulation integrated into existing utility bills to create immediate savings) will likely be more effective than those that focus on attitudes. For behaviors that are enacted fairly independently of contextual constraints (such as turning off lights when leaving a room), interventions targeting attitudes should have greater success. Likewise, when individuals do not have strong attitudinal or contextual constraints for engaging in a behavior, contextual cues, such as increasing the availability of recycling bins, may trigger sustainable behaviors even without targeting or changing attitudes.

Intervening to Change Behavior

Although there are significant barriers to engaging in sustainable behaviors, there are also a number of behavioral interventions that have shown success in promoting such behaviors. Intervention strategies have been traditionally grouped into those that target voluntary behavior change (through motivation or knowledge) or that change the context in which the behavior takes place (through incentives or regulations). Traditional voluntary approaches have focused on providing information via mass media campaigns (e.g., TV ads, billboards), but studies have found that such techniques tend to increase knowledge without significantly affecting behavior. More progressive approaches focused on increasing motivation in addition to knowledge have proven more successful. These include the use of individualized feedback in the form of carbon calculators or energy audits as well as social strategies such as modeling, public commitment, and competitions. Interventions aimed at changing the context of behavior include the use of command and control (e.g., regulations and efficiency standards), economic instruments (e.g., carbon taxes, rebates, and incentives), and infrastructure changes (e.g., public transit, efficient buildings, and appliances).

All of the above interventions share a basic assumption that individuals are consciously choosing to engage (or not to engage) in sustainable behaviors. A

barrier to behavior change. Often, behaviors like leaving cars idling, eating processed foods, and leaving lights and appliances on when not using them become so routine that the individual is hardly aware of his or her own habit and has a hard time breaking it.

Structural barriers to sustainable behaviors include available technologies and products, laws and regulations, pricing structures and subsidies, and social and cultural norms. For example, the availability of public transit varies widely by location; in some rural and suburban areas individuals need a car to get to the grocery store, school, or work. And increasing globalization has created a situation in which the environmental cost of some products is often inversely proportional to their financial cost. For example, a T-shirt made in China and imported for sale in the United States may have a lower price tag than one made in the United States for domestic sale but leaves a larger carbon footprint.

newer category of strategies includes those that provide a subtle nudge toward engaging in sustainable behaviors. These strategies are based on the idea that there are two simultaneous yet distinct processes that individuals use when making decisions: a cognitive, thinking system and an automatic response system. In a series of classic experiments that resulted in a Nobel Prize in Economics, Amos Tversky and Daniel Kahneman revealed a series of cognitive shortcuts that people engage in consistently and predictably when making decisions. They concluded that, although humans do have the ability to engage in logic and reasoning, we also have a natural, intuitive mode that often takes precedence in decision making. Interventions that target these cognitive shortcuts include setting the "default" choice for behaviors as the sustainable one (e.g., organ donation is automatic unless the individual elects to not donate), message framing (e.g., focusing on losses rather than gains), and shifting conceptions of socially acceptable or normative behavior (e.g., making it "cool" to drive electric and fuel-efficient cars).

Becoming Involved

Clearly, individual attitudes and behaviors are vitally important to achieving sustainability on a global scale. Many options are available to individuals and communities seeking to live more sustainably. The first is to become aware of one's own consumption and make daily choices that are consistent with a sustainable lifestyle. There are useful resources on the web about sustainability; the Stanford University School of Earth Sciences guide (http://sustainablechoices.stanford.edu) is a valuable resource that includes sections for home, travel, and shopping. Other resources include the Sustainable Table's Eat Well Guide (http://www.eatwellguide.org) for food, and Sierra Club's Green Home website (http://www.sierraclubgreenhome.com) for environmental home choices. Another is to get involved with organizations at the community level; examples include the Transition Network (http://www.transitionnetwork.org), in which local "transition town" communities work to self-organize to "rebuild resilience and reduce CO_2 emissions," and Me to We (http://www.metowe.com), which offers international volunteer trips and leadership training programs for interested individuals. Finally, organizations committed to solving institutional and societal level barriers for sustainability through advocacy include 350.org (http://350.org), Green America (http://www.greenamerica.org), and the Natural Resources Defense Council (http://www.nrdc.org). Awareness of and participation in sustainability efforts have been increasing around the world, resulting in more positive attitudes and a commitment to adopting sustainable behaviors.

See also Activism; Consciousness Raising; Empowerment; Ethics; Lifestyles; Resilience.

Resources

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350.org. http://350.org

Transition Network. http://www.transitionnetwork.org

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