

The Emergency of Climate Change: Why Are We Failing to Take Action?

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Latane and Darley developed a five-stage model to understand why people do and do not help other people in emergency situations. We extend their five-stage model to explore why people do and do not take action against climate change. We identify the factors that make climate change difficult to notice and ambiguous as an emergency; we explore barriers to taking responsibility for action; and we discuss the issues of efficacy and costs versus benefits that make action unlikely. The resulting analysis is useful on two levels. For educators and policy makers, the model suggests the most efficacious approaches to galvanizing action among U.S. citizens. For social scientists, the model provides a valuable framework for integrating research from diverse areas of psychology and suggests fruitful avenues for future empirical research.

In his article titled “The Moment of Truth,” Al Gore (2006) urges us to take the threat of climate change no less seriously than the threat of the Nazis during World War II. The scientific community makes similar pronouncements, arguing that climate change is a worldwide threat to the human species that needs immediate attention (see Intergovernmental Panel on Climate Change reports, 2001, 2007). Despite these calls to action, however, there is still little consensus among the American public that climate change should be put at the top of the national agenda. In fact, a poll conducted by Stanford University for ABC News (Harder, 2008) found that only 47% of Americans consider global warming an important issue to them personally, while 80% knew almost nothing about the 2008 presidential candidates’ positions and policy proposals on climate change.

Why is this? In the face of such clarion calls to action based on scientific evidence, why don’t Americans take united action? The present article attempts

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to shed light on this question by applying Latane and Darley's (1970) model of helping behavior in an emergency to the issue of climate change. Latane and Darley originally developed this model to understand why people often do not help other people in emergency situations. We have used the insights from decades of research on helping behavior to help us understand people's current reactions to the environment.

Although the Latane and Darley model is by no means the only psychological model with potential to help understand inaction around climate change, there are a number of reasons to use it. First, as we elaborate on in this article, the global climate crisis fits the model particularly well. Second, the model provides an integrative framework that highlights the relevance to climate change of disparate research areas. This in turn leads to possible new lines of inquiry that would not be otherwise apparent. Third, similar to the work by McKenzie-Mohr and Smith (1999) on fostering sustainable behavior, the Latane and Darley model illuminates the barriers that inhibit action, not just the factors that encourage it. Fourth, the model speaks directly to the limits of environmentalists' favorite approach to behavior change: information campaigns. The model clearly specifies that it takes a great deal more than simply informing the public or presenting fear communications in order for meaningful action to take place. Given this, we view their model as providing useful information for environmentalists and for public policy decision makers wishing to encourage change. Throughout this article, then, we will highlight the integrative, research, and policy implications associated with framing climate change by use of this model.

The Five-Stage Model of Helping: An Overview

Latane and Darley (1970) proposed that in order for someone to help, five criteria must be met. Additionally, they propose an overarching cost/benefit analysis that impacts whether or not a person will engage in helping (cf. Piliavin, Rodin & Piliavin, 1969; Piliavin, Dovidio, Gaertner & Clark, 1981). This cost/benefit analysis is most clearly associated with the later steps of the model, where people are weighing whether becoming involved will result in potential reward or punishment. According to this model, in order for helping to occur, a person needs to satisfy the requirements of each step and reach a satisfactory conclusion regarding the cost versus benefits of helping. Below we present a brief summary of each of the five steps and identify the factors associated with both promoting helping and the barriers to helping associated with each step.

The first step of the model makes the seemingly obvious point that a potential helper must notice the event in question. Research has demonstrated, however, that emergencies often go unnoticed, for a variety of reasons. For example, many emergencies lack salience in our lives (Rogers, Miller, Mayer & Duval, 1982).

The great distance, both physical and psychological, between our own lives and the lives of starving children on some other continent makes it very easy to remain unaware of their plight. Closer to home, abused partners and children may remain silent, their emergency may also go undetected, and consequently, no help will be provided. Characteristics of the helper also make a difference. A potential helper who is in a hurry (Darley & Batson, 1973) or is highly self-absorbed (Berkowitz, 1972; Mayer, Duval, Holtz & Bowman, 1985; Rogers et al., 1982) may not notice the distressed other.

The second step requires the potential helper to interpret the event as an emergency situation; if it is not seen as an emergency, helping will not occur. Emergency events are often ambiguous. Imagine a man lying on the grass with his eyes closed on a sunny day in a downtown area. Is he resting? Has he had a heart attack? The question may only be clarified after a period of many hours. Other people's reactions can also affect how we interpret the event. Given ambiguity, if others act as if it is not an emergency situation, we may rely on the information they provide and similarly come to perceive the event as a nonemergency (Latane & Darley, 1968). We may also be loath to overreact because we do not want to feel foolish in the eyes of others. Thus, our reliance on others for information and our need for approval can both facilitate and serve as a barrier to helping.

The third step requires individuals to feel a sense of personal responsibility to aid the distressed other. One key determinant of feeling responsible is having a sense of "we-ness" or connectedness to the victim (Duval, Duval & Neely, 1979; Hornstein, 1982). Smaller groups (Latane & Darley, 1968), similarity of the person to the distressed other (Miller, Kozu & Davis, 2001), and taking the victim's perspective (Batson, 2001; Batson & Powell, 2003) all contribute to a sense of connection. But another key determinant of responsibility is having no one else to rely on. Latane and Darley (1968) demonstrate that, ironically, a person needing help is less likely to receive help when there are many people present, as opposed to only one person. *Diffusion of responsibility* means that each person in a large crowd knows that there are many other people available to help, which results in each member feeling less responsible for the well-being of the victim.

Knowing what to do (the fourth step) and actually deciding to act (the fifth step) are also required before help will be given in an emergency. People will not help if they feel that their personal resources are insufficient to effectively cope with the emergency (Duval & Mulilis, 1999; Mulilis & Duval, 2003). Instead, they are likely to deny personal responsibility (Lalwani & Duval, 2000) and, consequently, not engage in helping behavior. Thus, factors that enhance a person's sense of empowerment or self-efficacy tend to promote helping behavior, as does information that provides people with effective ideas of how to address an emergency situation (Bandura, 1977; Mulilis & Duval, 1995).

The cost/benefit analysis that overrides these stages is especially relevant from Stages 2 through 5. For instance, we have already mentioned how a person might not want to overreact in a potential emergency situation for fear of losing the approval of others. Additionally, a person may not want to accept responsibility for the distressed other due to emotional attachment and the accompanying negative affect or possible blame if things go wrong (cf. Batson, 1987). Expanding on the former point, forming an ill-advised idea of how to help and implementing a flawed plan can also lead to criticism and possible condemnation. As for the latter point, experiencing a sense of “we-ness” with a distressed other can result in the distressed other’s pain becoming the potential helper’s pain as well. As Batson (1987) empirically demonstrates, when the potential helper experiences negative affect and can easily escape from the situation, that person is likely to do so.

Furthermore, the cost/benefit analysis extends not only to the helping act itself, but also to competing behaviors in which the potential helper could be engaged. For instance, imagine yourself on tour with a group in Italy. When a fellow traveler experiences heart problems, do you help that person get to an emergency room or do you follow the tour schedule and visit the Sistine Chapel? The cost/benefit analysis in this example refers not only to the costs and benefits of aiding the fellow traveler and escorting him/her to the emergency room, but also to the costs and benefits of missing the tour of the Sistine Chapel.

Helping Behavior and the Environment

Latane and Darley’s work makes clear that offering help in an emergency situation is not as assured as we might like to think. A number of psychological processes and situational factors can combine to create barriers to helping behavior at each of the five stages described above. In this section, we explore how these factors that both promote helping and serve as barriers to helping apply to decisions of U.S. citizens to take action against climate change. We will also highlight how their model helps to integrate research in this field, presents new lines of inquiry, and provides direction for public policy.

Throughout this analysis, several themes emerge. First, the psychological processes of each stage are inextricably intertwined and affect each other recursively. Although we tend to think of the model as a one-way, linear process, for dealing with emergencies that unfold over time, it is clear that what happens at later stages of the model can influence earlier stages. Second, society-level structural (policy) changes beget individual-level psychological changes, which then make further structural changes possible. These two levels of analysis are also inextricably intertwined. Third, the key to successful action is *collective action*, at nearly every stage and at both the societal and the psychological level.

Stage 1: Noticing the Event

Many environmental problems are not particularly noticeable, and climate change is no exception. For example, rising CO₂ levels in the atmosphere is one of the root causes of climate change. However, changes in the atmosphere of 50–75 parts per million CO₂ over the last 50 years are undetectable to our senses. If we could all *see* or otherwise personally detect carbon levels rising, reactions to climate change likely would be very different.

Even when comparing temperatures across time, the yearly variability of temperature makes it difficult to notice a degree or two Fahrenheit change during the past 50–100 years, particularly against the backdrop of natural climatic shifts that are not the result of human behavior. In fact, only sophisticated scientific modeling of the CO₂ and temperature changes can definitively detect the unique contribution of humans to climate fluctuations.

Additionally, climate changes are not spread equally over the globe; the most dramatic changes are occurring in more remote and distant areas, such as the arctic regions, where there are very few people to notice the effects. A recent poll of residents in Alaska supports the idea that being closer to an emergency makes a difference: 71% of Alaskans believe that global warming is a serious threat to Alaska as a whole and to the United States (Leiserowitz & Craciun, 2006), compared to only 41% of U.S. citizens in the lower 48 states who view it as a very serious problem (Pew Foundation Poll, July, 2006).

Other factors of modern life make people less likely to notice the effects of climate change. People in modern industrial societies like the United States spend up to 90% of their time indoors in artificial, temperature-controlled environments (Evans & McCoy, 1998). This lessened connection between humans and their natural world is not unlike the psychological distance and lesser connection that exists between Westerners and starving children in Africa. Further, most people in the modern industrial world do not depend directly on nature for their livelihoods, and many have jobs that require moving from place to place. As a result, people are less likely to be deeply rooted in a specific environment and, consequently, less likely to notice subtle changes occurring within it. In other words, there are societal costs associated with frequent relocations and jobs structured in ways that disconnect people from the natural world.

People who are intimately tied to the environment do tend to notice the environmental changes that are taking place. Informal observations and formal analysis of decades of records kept by regional maple sugar producers in New England and Canada reveal that the maple sugar season starts and ends earlier than a generation ago (Proctor Maple Research Center, 2006). Records kept by bird watchers and other naturalists paint a similar picture: the flight of the butterfly, the song of the frog, and the flowering of cherry blossoms in Kyoto have all been altered by climate change (Parmesan, 2006; Price & Glick, 2002). Those who carefully follow these patterns sense it; the rest of us do not.

Given that the changes are often subtle, occur over relatively long periods, and are most noticeable in remote areas of the world, policy makers, educators, and scientists need to make special efforts to help everyday people in the United States take note of the changes. The presentation of photos from different periods has been used to good effect to dramatize the climate changes that have taken place. For instance, images of snow loss from Mount Kilimanjaro from 1970 to present or the reduction of the size of the glaciers in Glacier National Park provide excellent examples of how to make people aware of the substantial changes that have occurred over time.

Taking steps to psychologically decrease the distance between the potential helper and the emergency may also help people to notice climate change. Most North Americans may not pay much heed to rising sea levels in far off lands, but should their own city begin to flood, it would catch their attention. Documenting more proximate changes, such as forecasted flooding in New York and Washington D.C. might prove useful, as might images that link climate change to the increased frequency and strength of hurricane damage, tornado damage, flood, drought, and fire damage.

People can also be taught to see global environmental change on a more everyday level. In his book *Bringing the Biosphere Home*, Thomashow (2002) argues for the importance of learning how to observe and interpret the ecological patterns happening around us, and connecting these observations to the broader picture of the biosphere. Experiential evidence of climate change is available to people living everywhere, if they know how to look for it. Science education, both formal and informal, can help build a population of people who know how to notice.

The above observations suggest several new lines of research. Given that people who spend more time in the environment as naturalists or laborers are more likely to notice the effects of climate change, the concept of place attachment (Kyle et al., 2004) might be an interesting avenue of study; people who are strongly attached to a specific natural setting may very well be the most likely to notice changes occurring in that setting. Similarly, people who view themselves as being an egalitarian member of the natural world (i.e., score relatively high on the Connectedness to Nature Scale, Mayer & Frantz, 2004) or whose identity is tied to the environment (Environmental Identity Scale, Clayton & Opatow, 2003) may not only be more likely to notice changes in their environment, but may be more likely to seek out information relevant to potential environmental changes. These lines of inquiry seem very promising.

Stage 2: Interpreting the Event as an Emergency

Once people take note of the changes taking place around them, they must realize that these changes indeed indicate an emergency. This may seem like the

simplest part: present people with the facts. Yet for many years, there was not a consensus on whether climate change was a real phenomenon, making it easy for people not to define the event as an emergency. Even today, some still describe climate change as “the greatest hoax ever perpetrated on the American people” (U.S. Senator James Inhofe, 2005). How can people conclude this in the face of overwhelming evidence?

It is because humans are not objective and impassive processors of information; their fears, desires, and goals influence strongly how they evaluate and weigh evidence (Baumeister & Newman, 1994; Kunda, 1990; see Fiske & Taylor, 2007, for a summary of this literature). It is not hard to see why U.S. citizens would be motivated to deny that climate change is an emergency.

First, a host of psychological studies demonstrate that human beings are very skilled at denying that which is inconvenient. This is particularly likely to happen when people are made afraid. Early social psychological work on attitude change found that communications designed to motivate action through fear (The end is near!) often backfire (Janis & Feshbach, 1953). That is, instead of producing attitude change toward the communication, the communication can lead people to feel anxious and motivated to avoid thinking about the distressing information. This surprising finding led social psychologists to conduct research investigating the conditions under which fear-arousing communications were most likely to produce the desired change in attitudes. They discovered that in order to be effective, fear communications must provide highly specific recommendations regarding the behavior that needs to be performed in order to avoid the unwanted outcome (Leventhal, 1970; Rogers & Mewborn, 1976; Leventhal, Meyer & Nerenz, 1980). In the language of Latane and Darley, these appeals must pave the way for passing through the other stages of decision making that lead to action.

Many environmental communications try to dramatize the importance of the environmental threat so that people will view it as an emergency; they are classic fear communications. For example, Al Gore warns in his *Vanity Fair* article, “The Moment of Truth,” that there are “dire warnings that the worst catastrophe in the history of human civilization is bearing down on us, gathering strength as it comes.” Kolbert (2006) in her celebrated book *Field Notes from a Catastrophe*, states at the very end: “It may seem impossible to imagine that a technologically advanced society could choose, in essence, to destroy itself, but that is what we are now in the process of doing.”

The research on fear appeals tells us that these messages should not end with a crescendo of fear, but rather with a message that helps people move through the later stages of the model. Getting people to notice an event is worthless if they are so distraught that they deny its reality (Stage 2), deny responsibility (Stage 3), and have no idea what to do (Stage 4). Presenting a clear path forward may make it more emotionally palatable to acknowledge the emergency situation in the first place.

In addition to people's motivation to refute inconvenient messages, the general public's skepticism of science presents another barrier to recognizing climate change as an emergency. Various authors have discussed the general anti-intellectualism that is present in the United States (Hofstadter, 1964; Sachs, 2008; Jacoby, 2009). Antiscience skepticism is one of the major factors that needs to be addressed through education and leadership. As Sachs states, besides addressing our educational system and "aggressive fundamentalism" in the United States that "denies modern science. . . we need scientifically literate politicians adept at evidence-based critical thinking to translate these findings and recommendations into policy and international agreements."

Third, as stated when we introduced Latane and Darley's model, individuals are impacted by the way others react in an emergency situation; they rely on others for information. In the environmental literature, numerous studies illustrate how norms can be made salient by actually viewing the behavior of another person (Aronson & O'Leary, 1982–1983) or inferring the actions of others (Cialdini, Reno & Kallgren, 1990). Thus, actually seeing others make efforts to reduce their carbon footprint (or even inferring that others are engaging in these actions) may prove to be effective in helping to establish that the threat of climate change requires immediate action.

Fourth, cognitive dissonance is a psychological force working against the recognition of climate change as an emergency. Cognitive dissonance is the inherently unpleasant tension we feel when we act in a manner that is inconsistent with our self-concept (Festinger, 1957). One of the major tenets of cognitive dissonance theory is that to relieve the tension that arises from being inconsistent, people will often change their beliefs, attitudes, and self-concept to fall in line with their actions. Stated differently, when people freely engage in an action, they become committed to that action (i.e., the action becomes resistant to change). Given the resistance of this action to change, people are then thought to adjust their beliefs and self-concept to be consistent with their acts. Thus, what people *do* influences what they *believe* and how they see *themselves*.

Presently, the way our society is structured makes it easiest for people to *do* things that exacerbate climate change. Most people cannot easily avoid the production of greenhouse gases in their everyday actions—from buying produce shipped from distant places to using shampoo in plastic bottles to driving to work. Given this, to avoid psychic tension associated with cognitive dissonance, people may adjust their *beliefs* and *self-concepts* to be consistent with these actions. Consequently, they may come to believe that climate change is not a priority and develop self-concepts that are not particularly pro-environmental.

Overcoming the psychological force of cognitive dissonance requires structural changes in our society to facilitate behavior change. People need to be provided with real options for reducing their carbon footprint so that they are not inevitably channeled into inaction. Policy makers should seek programs that make

it easier for people to *do* pro-environmental actions; this in turn paves the way for *pro-environmental beliefs* and *self-concepts*, which in turn creates a public that is ready for further policy change. For example, public transportation in most of the United States is notoriously poor and inconvenient, or in many cases, nonexistent. City planners and government need to provide transportation options that are more climate neutral (Register, 2006), and employers could allow greater flexibility for people to telecommute. As another example, the fuel efficiency of cars available to Americans lags far behind the fuel efficiency of cars readily available in Europe and Japan. Raising CAFÉ standards would motivate car makers to provide consumers with real choices for fighting climate change. Not only would this have the substantive and obvious impact of reducing carbon emissions in the United States, cognitive dissonance theory suggests that it would also help change people's perceptions of climate change as an emergency requiring immediate action, paving the way for even greater behavior change.

Optimism is another factor that can lead people to fail to perceive an event like climate change as an emergency. Optimism is typically highlighted as a positive trait, a healthy sign of successful development. Generally speaking, people do not think that negative things will happen to them; this belief helps them get through the day. Thus an optimistic individual, when faced with a threat that will unfold over a long period and be influenced by many factors, has lots of leeway to make optimistic predictions. In responding to climate change, people can believe that scientists will come up with a technological breakthrough or that the problems may never fully materialize. Certainly, the optimism that characterizes the American spirit has been held up as a defining positive characteristic of the American people (Allport, 1937; Mezulis, Abramson, Hyde & Hankin, 2004). But in this instance, if it leads to inaction, it may be anything but a characteristic to rejoice about. How do we direct this optimistic spirit into action against climate change? We will return to this question momentarily.

Lastly, educational organizations in general, and the National Park system in particular, could play a critical role in educating people about climate change and helping them define it as an emergency. Millions of people visit national parks each year, viewing introductory films to each park, and participating in ranger-led educational programs. This is a wonderful opportunity to inform the public about the crisis nature of climate change as it relates to the nation's most beautiful natural treasures.

Stage 3: Feeling Personally Responsible to Act

Once the emergency is recognized, potential helpers must feel personally responsible to do something. Unfortunately, responsibility is subjectively defined. All cultures have a responsibility norm: an understanding about who and what we are responsible for. Modern U.S. culture defines that norm more narrowly than

most cultures. Psychologically speaking, it is relatively easy for U.S. citizens not to feel responsible for taking action to help. Further, because the emergency of climate change is influenced by so many parties, there are many potential agents who can be construed as responsible. These two factors—a narrowly defined norm of responsibility and the involvement of many parties—provide ideal conditions for diffusion of responsibility to occur. Each individual is free to assume that it is someone else's job to take action.

In fact, cognitive dissonance theory would suggest that people are not merely free, but *motivated*, to perceive that it is someone else's job; individuals can resolve the dissonance induced by daily engaging in carbon-emitting behaviors by reducing their perception of choice in the matter. In effect, they can say, "I can't do anything; it's someone else's job" or, "The government is already taking care of this."

Besides diffusion of responsibility, individuals face other psychological barriers to feeling responsible to act. As stated earlier, when the magnitude of the emergency is greater than the personal resources available to an individual, the potential helper is likely to engage in defensive attribution and not accept responsibility for the emergency (see Kaplan, 2000, for a similar argument). Climate change is a *huge* problem. Clearly, no one person has the personal resources to have anything but a tiny impact, or the cost of having an impact may be perceived as far too great. Thus, scientific and environmental messages that emphasize the magnitude of climate change, which may have the desired effects of making people notice the event and interpret it as an emergency, may ironically have the undesired effect of making people feel less responsible.

The stress and coping literature has studied this phenomenon extensively. Lazarus and Folkman (1984) discuss two broad coping strategies: problem-focused versus emotion-focused coping. Problem-focused coping refers to taking direct action to confront a threat (moving forward through the stages of the model), whereas emotion-focused coping involves ignoring and/or denying the threat (getting stuck in the early stages of the model). When do people engage in one form of coping or the other? A major determinant is individuals' perception of control. Given control, individuals are more likely to engage in problem-focused coping, while with little perceived control, emotion-focused coping may predominate.

McKenzie-Mohr and Smith (1999) argue that when tackling global issues, a sense of perceived control is largely impacted by our sense of community—of people working in concert with others. By acting in concert with others, people can experience a greater sense of self-efficacy or personal control and, consequently, be less likely to engage in emotion-focused coping and defensive denial of responsibility (Lazarus & Folkman, 1984). Gardner (2006) points out that environmentalists and churches share many commonalities, and a partnership between the two could create meaningful collective change. For instance, both groups argue for less consumption and materialism, simpler lifestyles and, in essence, a

smaller ecological footprint. But churches have other resources that make them ideal venues for collective action. Churches have strong communities. They also often have strong leadership, broad organizational ties, wealth, land holdings, and a moral voice that can inspire people to change their lifestyles and take action. Combining the prophetic voice, leadership, organization, financial capital, and voting strength of churches with environmental tactics for positive change could produce the concerted social movement that is required.

Another potential strategy to increase feelings of responsibility is to increase U.S. citizens' sense of connection to nature. Research on prosocial behavior consistently demonstrates that feeling connected to others increases willingness to help. Our research extends this pattern to the natural world: feeling a sense of connectedness to nature is associated with environmentally responsible behavior (Mayer & Frantz, 2004; Trostle, 2008). Connection to nature can be increased by spending time outdoors (even as little as 15 minutes), by looking out a window onto a natural area (F.S. Mayer and C.M. Frantz, unpublished data), by spending time in a greenhouse (F.S. Mayer and C.M. Frantz, unpublished data), or by looking at videos of natural environments (Mayer, Frantz, Bruehlman-Senecal & Dolliver, 2008). The "nature" that people are exposed to does not have to be expansive and pristine, either. City dwellers can benefit from having a tree live outside their window (Kaplan, 2001).

Furthermore, our work points out that increasing individuals' knowledge about an issue, although intuitively appealing, is *not* likely to increase a sense of responsibility. We have tested this idea in our research by contrasting people's beliefs and attitudes about the ecological crisis (using the New Ecological Paradigm, or NEP, Dunlap, Van Liere, Mertig & Jones, 2000) to their experiential sense of being a part of the natural world (using our Connectedness to Nature Scale, or CNS, Mayer & Frantz, 2004). The CNS and the NEP both related to environmentally responsible behavior, $r = .44, p < .01$, and $r = .20, p < .05$, respectively. However, when we statistically controlled for the CNS, the NEP was no longer significantly related to these acts. When controlling for the NEP, the CNS remained significantly correlated with the pro-environmental acts, $r = .42, p < .01$. These data suggest that the general beliefs and knowledge do not predict behavior as well as the personal feeling of being connected to nature.

Given this, climate scientists, environmental activists, parents, and educators who wish to promote change need to do more than simply create an informed public. To be effective, programs must also instill a sense of connection between people and the natural world. The work of Kals, Schumacher, and Montada (1999) shows that for children, early experiences in nature with a loved one, such as a parent, help to foster a child's love of nature later in life (see also Louv, 2008). The National Park system can also play a valuable role. A well-designed park facilitates connection with the natural environment for wide swaths of American society (e.g., paved paths make it possible for the wheelchair-bound to experience nature). Further, educational programs that discuss climate change may pack an

even more powerful punch in a context in which people are seeking out and connecting with the most beautiful natural environments in our nation.

Stage 4: Knowing What to Do

It is noteworthy that this relatively later stage of Latane and Darley's model is the best articulated. Many writers and organizations provide information about how to minimize our carbon footprint: recycling, buying locally grown foods, replacing incandescent light bulbs with compact fluorescents, insulating one's home, carpooling—the list goes on and on. Thus, much of the information and technology is out there; the harder part is motivating people to seek it out (discussed above) and to actually act on it (discussed further below).

There is debate, however, as to whether these lists of behaviors are actually the ones that ought to be encouraged. A growing concern among environmentalists is that the focus on behavior change at the individual or household level is misplaced; change at the level of government and industry is in fact far more urgent. From this perspective, the helping behaviors that individuals should be encouraged to perform are things like lobbying their elected representatives, putting pressure on corporations, and making climate change a top priority during elections. Parallel to the discussion above about raising CAFÉ standards, these behaviors are not only effective because of the direct structural changes that this kind of political pressure could create. They also pave the way for individual changes in attitude and behavior as societal structure makes low-carbon living more feasible.

In addition, focusing on these more collectively oriented behaviors has the important benefit of increasing individuals' sense of efficacy, and by extension, their willingness to act. Activists are just beginning to tap the possibilities afforded by high-speed communication for networking and mobilizing large numbers of like-minded individuals to put pressure on elected officials. New organizations are also springing up, connecting people across space via the Internet. For example, the Alliance for Climate Protection's We Campaign (<http://www.wecansolveit.org>) and the Center for a New American Dream's Carbon Conscious Communities project (<http://www.newdream.org/c3/index.php>) connect like-minded citizens with each other, and seek to make visible to the individual the significant effect that their actions can have when aggregated across many people. Beyond the immediate benefits such networking brings, it also creates an environment in which individuals are psychologically better able to respond to the emergency of climate change over the long run.

Stage 5: Implementing the Required Acts

Once potential helpers have passed through the previous four stages—noticing climate change, interpreting it as an emergency, feeling responsible to do

something, and knowing what to do—all that is left is to act. However, people often do not act. Sometimes people do not act because it is structurally impossible (there is no public transportation one can take to work), sometimes because it is inconvenient (see below). But habit and norms also play an important role.

Given that acting to fight climate change involves in part the repetitive performance of everyday behaviors (turning off the lights, shunning produce shipped from Chile in the grocery store), individuals who have successfully passed through the first four stages may simply forget to take the appropriate action. Research on prompts (McKenzie-Mohr & Smith, 1999) suggests that reminders—if noticeable, self-explanatory, and placed temporally and spatially near the targeted behavior—are effective in making potential actions cognitively accessible. For example, a sign above a light switch to turn off the light when you leave the room makes it more likely that an individual will actually turn off the light.

Norms can play a similar role. Norms not only provide information but serve as unspoken guidelines for behavior; they are “what people do.” Once established, norms for environmentally friendly actions will guide behavior without any explicit effort on the part of policy makers or activists. Policy can lay the groundwork for behavior; once it becomes normative, the formalized policy becomes less relevant.

The Overarching Cost/Benefit Analysis

We have discussed how the overarching cost/benefit analysis affects Stages 2 and 3. We now reflect on how it impacts the later stages of this model. Historically, many of the ideas (Stage 4) and actions (Stage 5) associated with environmentally responsible behavior have been associated with sacrifice. From President Jimmy Carter’s presidential address where he discussed “tightening our belts” to calls for less consumption of material goods and smaller houses, environmental messages are for many associated with having less. A great deal of research has established a very powerful psychological principle: we are very averse to loss (Kahneman & Tversky, 1996). As others have before us (Kaplan, 2000), we argue that the association between environmentally responsible behavior and loss presents a formidable psychological barrier to lifestyle change.

Thus, policy makers and activists would do well to reflect on how to rewrite the cost-benefit equation in favor of environmentally responsible behavior. This can be done in several ways. One approach is to increase the cost of our current behavior, in a direct and experiential way. Policies that make visible the real costs of our behaviors (e.g., carbon taxes) are one potential avenue (Brown, 2001). Another approach is to highlight the benefits associated with switching from a consumerist lifestyle to a sustainable lifestyle. Decades of work demonstrates that money and happiness become unrelated to one another once basic needs are met (Myers, 2000). This message needs to be convincingly spread.

Hand in hand with this communication, however, should be a message that focuses people on what really matters. When you ask the general public what leads to a happy and fulfilling life, they correctly identify the same factors that psychological research identifies (Frantz, 2008; Jhally, 1997). The main predictors of happiness have less to do with material goods than with the quality of our marriages, personal friendships, and the social support we experience. A sense of meaning and purpose—through work, faith communities, or other activities—also contributes to well-being. Additionally, a burgeoning body of work documents that nature is a source of happiness (Kaplan, 2001; Mayer, Frantz, Bruehlman-Senecal & Dolliver, in press; van den Berg, Koole & van der Wulp, 2003), mental health (Honeyman, 1992), and physical health (Kaplan, 1992, 1993; Moore, 1981; Ulrich, 1984).

Yet a culture of consumption saturated with advertising for products often leads people away from focusing on these contributors to life satisfaction. As the final pieces of this puzzle, then, people still need to view their lives as imbued with meaning, purpose, and at least the chance of reaching a positive end state. Educators and activists need to find ways to convince the American public that an environmental lifestyle is a more viable route to this end than the path they have been on.

Concluding Thoughts

We have argued that there are many psychological forces that explain why U.S. citizens are not acting to curb climate change: climate change is difficult to notice and controversial as an emergency (despite the overwhelming scientific evidence). Individuals and organizations can easily conclude that someone else is responsible for acting, and that individual actions are inadequate to the task. Finally, doing something about climate change is, as Al Gore puts it, inconvenient.

We have also argued that there are many places in which policy could help mitigate these forces. Educational policy can encourage critical, unbiased assessment of the scientific evidence for climate change, and can help youth develop a perceptive, connected relationship with the natural world. Economic and environmental policy could create a societal infrastructure that supports individuals in their efforts to make responsible choices, and thus dramatically change experiences of cognitive dissonance and the cost-benefit analysis of climate neutral choices. Perhaps most important is fostering programs that emphasize the efficacy of individuals acting in concert.

Additionally, we argue for a positive message to motivate people to engage in environmentally responsible behavior. A more carbon-neutral path can be a more rewarding and fulfilling path, to the extent that it focuses our attention on the things that are truly associated with well-being. That this lifestyle also protects the environment is an added benefit that we hope will motivate people to take action to rectify the environmental challenges of our day.

As a last point, we argue that sound policy is based on sound theory. Latane and Darley's model of helping provides an effective model that helps researchers and policy makers alike frame the issue of climate change broadly. As we have shown, the model provides among other things, a framework that organizes the research on normative behavior, communication, commitment, cognitive dissonance, coping behavior, and prompts. It also identifies not only the motivators of action, but the barriers to action, and the relationship between how considerations at one stage can impact effectiveness at another stage. We hope our suggestions for research and policy prove useful.

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