



Barriers to Acting in Time on Energy and Strategies for Overcoming Them

Max H. Bazerman, Ph.D.

Working Paper

09-063

Copyright © 2008 by Max H. Bazerman, Ph.D.

Working papers are in draft form. This working paper is distributed for purposes of comment and discussion only. It may not be reproduced without permission of the copyright holder. Copies of working papers are available from the author.

Barriers to Acting in Time on Energy and Strategies for Overcoming Them

Max H. Bazerman

The five prior papers in this volume offer many excellent ideas on climate change, oil, transportation, and electricity policies, carbon capture and storage, and the generation of innovative energy solutions. Collectively, these papers provide the next presidential administration with a wide array of excellent policy suggestions. I will not add to this list or critique those that have been offered. Rather, I begin with the assumption that we have identified a useful, scientifically supportable agenda for changes in our energy policies. My goal is to describe the likely barriers to enacting these wise policies and present strategies for overcoming these barriers.

As noted earlier in this volume, the issue of global climate change was identified decades ago. In fact, it was first noted in the media in the 1930s, when a prolonged period of warm weather demanded explanation, yet interest in the matter disappeared as cooler temperatures returned. For the past decade, most experts have accepted climate change as a fact, making the issue difficult to ignore—yet many politicians, and the voters who elect them, have done exactly that: ignored the problem. Scientists, policymakers, and others have come up with good ideas to address climate change and the other energy issues discussed in this volume; many of the core aspects of the ideas discussed here were developed long ago. However, predictable barriers have prevented wise policies from being implemented.

In this paper, I identify and suggest ways to overcome these barriers. My goal is to explore the cognitive, organizational, and political barriers that prevent us from addressing energy problems despite clearly identified courses of action. In particular, I address barriers that could hold back the policy recommendations made in the earlier papers in this volume. I borrow from the “predictable surprises” framework that Michael Watkins and I (Bazerman and Watkins, 2004) developed to explain the human failure to act in time to prevent catastrophes. I also borrow ideas from a paper of mine on cognitive barriers to addressing climate change (Bazerman, 2006). To focus the discussion, I will treat climate change as the exemplar energy-related problem, but the ideas I present are relevant to the enactment of wise policies across a range of issues.

As an example of the human failure to act in time to prevent foreseeable

catastrophes, Michael Watkins and I (2004) argue that our leaders had ample warning to act in time to stop the events of 9/11 from happening. We note that the U.S. government knew that Islamic terrorists were willing to become martyrs for their cause and that their hatred and aggression toward the United States had increased throughout the 1990s. Our government knew that terrorists had bombed the World Trade Center in 1993, hijacked an Air France airplane in 1994 and attempted to turn it into a missile aimed at the Eiffel Tower, and attempted to simultaneously hijack eleven U.S. commercial airplanes over the Pacific Ocean in 1995. High-ranking government officials also knew that it was easy to board commercial airplanes armed with small weapons. In fact, this information was presented in many General Accounting Office reports and was identified by Vice President Al Gore's special commission on aviation security (1996). Together, this information created what we called a predictable surprise and what others in this volume describe as a failure to act in time. Watkins and I (2004) argue that the failure to act in time is an unfortunately typical pattern of human behavior, one that can also be seen in the persistent failure to solve the problem of auditor independence, which contributed to the collapse of Enron, Arthur Anderson, and many other firms at the start of the millennium.

Just as our government did not know how many planes the terrorists would take over on 9/11 or what their targets would be, we do not know which energy crises looms largest or which will hit first. We can be confident, however, that many of the issues identified in this volume will continue to grow and that large-scale disasters will occur if we fail to act in time.

The creation and implementation of wise policy recommendations requires us to anticipate resistance to change and develop strategies that can overcome these barriers. Why don't wise leaders follow through when the expected benefits of action far outweigh the expected costs from a long-term perspective? People typically respond to this question with a single explanation, a key error when explaining events (McGill, 1989; Bazerman and Watkins, 2004). This tendency to identify only one cause holds true for social problems ranging from poverty to homelessness to teenage pregnancy (Winship and Rein, 1999). McGill (1989) illustrates this cognitive bias by noting that people have argued endlessly over whether teenage promiscuity or lack of birth control causes teenage pregnancy, when the obvious answer is that both cause the problem. Similarly, many people seek to identify one cause of climate change, when it is abundantly clear that there are multiple causes.

Enacting wise legislation to act in time to solve energy problems requires surmounting cognitive, organizational, and political barriers to change (Bazerman and Hoffman, 1999). Efforts targeted at just one level of response will allow crucial barriers to persist. As an example, many well-intentioned organizations focus on identifying the political barriers to enacting stronger campaign finance reform in the United States. Such efforts overlook the fact that the issue of campaign finance reform is insufficiently salient in the minds of the public, and for systematic and predictable reasons. True improvements in campaign financing will require changing the way citizens think about the topic and changing the political system that continually fights against meaningful reform. But, more on campaign finance reform later.

Drawing on this broad approach to reducing barriers to solving complex problems, the remainder of the paper outlines three types of barriers—cognitive, organizational, and political—that confront the enactment of the wise energy recommendations in this volume. The final section moves from the identification of barriers to highlight strategies for overcoming them.

Cognitive Barriers to Acting in Time on Energy

In 2002, the Nobel Prize in Economics was awarded to a psychologist: Daniel Kahneman of Princeton University. Kahneman and the late Amos Tversky created a field of study based on identifying the systematic and predictable mistakes that even very smart people make on a regular basis (Tversky and Kahneman, 1974; Bazerman and Moore, 2008). At the core of this field is the notion that human beings rely on simplifying strategies, or cognitive heuristics, that lead us to make predictable errors. These errors include overconfidence, anchoring of judgments, being influenced by how problems are framed, escalation of commitment, ignoring the decisions of other parties, and so forth. Scientific evidence overwhelmingly has shown that people depart from rational thought in these predictable ways, and the list of specific biases is large (Bazerman and Moore, 2008). This literature has created scientific revolutions in economics, finance, marketing, negotiation, and medicine, among other fields, and has been popularized in many trade books (e.g., Thaler and Sunstein, 2008; Ariely, 2008)

While many cognitive biases are potential barriers to the enactment of wise energy policies, three appear to be especially relevant for energy policy. First, people intuitively

discount the future to a greater degree than can be rationally defended, despite our contentions that we want to leave the world in good condition for future generations. Second, positive illusions allow us to conclude that energy problems don't exist or are not severe enough to merit action—in other words, to stick our heads in the sand. Third, we interpret events in a self-serving manner, a tendency that leads us to expect others to do more than us to solve energy problems.

Discounting the future. Would you prefer \$10,000 today or \$12,000 in a year? People faced with these questions often choose the former, ignoring the opportunity to earn a 20 percent return on their investment. Similarly, homeowners often fail to insulate their homes appropriately and fail to purchase energy-efficient appliances and fluorescent lighting, even when the payback would be extremely quick and the rate of return enormous. Research overwhelmingly demonstrates that people too far too often use an extremely high discounting rate regarding the future (Loewenstein and Thaler, 1989); that is, we tend to focus on or overweight short-term considerations.

Organizations also discount the future. A leading university undertook a major renovation of its infrastructure without using the most cost-efficient products from a long-term perspective (Bazerman, Baron, and Shonk, 2001). Due to capital constraints on construction, the university implicitly placed a very high discount rate on construction decisions, emphasizing reduction of current costs over the long-term costs of running the building. As a result, the university passed on returns that its financial office would have been thrilled to receive on its investments. By contrast, as part of its Green Campus Initiative, Harvard University has set up fund to finance worthwhile projects for different colleges within the university that may have been overlooked due to short-term budget pressures. This initiative reduces the likelihood that units of the university will make poor long-term decisions as a result of the tendency to overly discount the future.

Over-discounting the future can create a broad array of environmental problems, from the overharvesting of the oceans and forests to the failure to invest in new technologies to respond to climate change. Herman Daly observes that many environmental decisions are made as if the earth “were a business in liquidation” (Gore, 1993). We discount the future the most when the future is uncertain and distant, and when intergenerational distribution is involved (Wade-Benzoni, 1999). When people claim that we should preserve the earth, they tend to think about their descendants. But when

opportunities arise that would impose environmental costs on future generations, we begin to view them as vague groups of people living in a distant time. Ackerman and Heinzerling (2004) connect the discounting of the future to driving species to extinction, the melting of polar ice caps, uranium leaks, and failure to deal with hazardous waste. From a societal perspective, overweighting the present can be viewed not only as foolish, but also immoral, as it robs future generations of opportunities and resources (Stern, 2007).

Positive illusions. The United States is likely to be substantially altered by the effects of climate change (more destructive hurricanes and the submersion of oceanfront land). Yet the George W. Bush administration has repeatedly ignored opportunities to play a constructive role on climate change and failed to take steps to control or reduce the country's heavy reliance on fossil fuels. Part of the problem has been political action by the organizations most threatened by aggressive responses to climate change (e.g., auto manufacturers, oil and gas companies, and elected officials closely tied to these industries). But citizens also contribute to the problem by failing to modify their energy usage, at least until the price of gas hit \$4.00 per/gallon. Why have we made such egregious long-term mistakes?

One likely culprit is the existence of positive illusions about the future. In general, we tend to see ourselves, our environment, and the future more positively than is objectively the case (Taylor and Brown, 1988). These positive illusions have benefits, such as enhancing self-esteem, increasing commitment to action, and allowing us to persist at difficult tasks and to cope with adversity (Taylor, 1989). But research also shows that positive illusions reduce the quality of decision making and play a role in preventing us from acting in time (Bazerman and Watkins, 2004; Bazerman and Moore, 2008).

While people hold a wide variety of positive illusions, two are particularly relevant to inattention to energy and climate change: unrealistic optimism and the illusion of control (Bazerman et al., 2001). Unrealistic optimism is formally the tendency to believe that one's future will be better and brighter than that of other people, and better and brighter than an objective analysis would imply (Taylor, 1989). Undergraduates and graduate students tend to expect that they are far more likely to graduate at the top of the class, get a good job, secure a high salary, enjoy their first job, and to be written up in the newspaper than reality suggests. We also assume that we are less likely than our peers to develop a drinking problem, get fired or divorced, or suffer from physical or mental problems. And, we believe

and act as if the changes caused by climate change will be far less significant than the scientific community predicts.

We also tend to believe that we can control uncontrollable events (Crocker, 1982). Experienced dice players believe that “soft” throws result in lower numbers being rolled; gamblers also believe that silence by observers is relevant to their success (Langer, 1975). Such illusory behaviors result from a false belief in our control over the most uncontrollable of events. In the realm of climate change, this type of positive illusion is represented in the common expectation that scientists will invent technologies to solve the problem. Unfortunately, there is little concrete evidence that a new technology will solve the problem in time. But the overestimation that a new technology will emerge serves as an ongoing excuse for the failure to act.

Egocentrism. Whose fault is climate change? As we saw in Kyoto, parties are likely to differ in their assessments of their proportionate blame and responsibility for the problem. Emerging nations blame the West for its past and present industrialization and excessive consumption. Meanwhile, the U.S. Government justified its failure to ratify the agreement in part because China and India accepted little responsibility for their contribution to climate change. The United States and some other developed economies blame emerging nations for burning rainforests, overpopulation, and unchecked economic expansion.

These alternative views are consistent with the tendency to be biased in a self-serving manner, or to suffer from “egocentrism” (Babcock and Loewenstein, 1997; Messick, and Sentis, 1983). A concept related to the positive illusions described above, egocentrism refers to the tendency to make self-serving judgments regarding allocations of blame and credit, a phenomenon that in turn leads to differing assessments of what a fair solution to a problem would be.

Messick and Sentis (1985) show that we tend to first determine our preference for a certain outcome on the basis of self-interest, then justify this preference on the basis of fairness by changing the importance of the attributes affecting what is fair. Thus, the U.S. government might indeed want a climate change agreement that is fair to everyone, but its view of what is fair is biased by self-interest. Unfortunately, egocentrism leads all parties to believe that it is honestly fair for them to bear less responsibility for reversing climate change

than an independent party would judge as fair. Thus, the problem is worsened not by our desire to be unfair, but by our inability to view information objectively.

Moreover, most energy issues are highly complex, lacking conclusive scientific and technological information. This uncertainty allows egocentrism to run rampant (Wade-Benzoni, Tenbrunsel, and Bazerman, 1996). When data are clear, the mind's ability to manipulate fairness is limited; under extreme uncertainty, egocentrism is strongly exacerbated. Rawls (1971) proposed that fairness should be assessed under a "veil of ignorance"—that is, we ideally should judge a situation without knowing the role we ourselves play in it. Thus, from Rawl's perspective, egocentrism describes the difference between our perceptions with and without a veil of ignorance.

Positive illusions, egocentrism, and the tendency to discount the future can have an interactive effect. After decades of insisting that the scientists are flat-out wrong, those who have strongly opposed efforts to halt climate change for self-interested reasons have changed their argument. Many no longer argue that climate change does not exist, that humans do not contribute to climate change, or that others are to blame for the problem. They now argue that it would be too costly to respond to the problem. This transition in argument—from "There is no problem" to "We are not responsible" to "It's too expensive to fix"—results in small benefits for the current generation in exchange for high costs to future generations. Regarding some details and proposals, the opponents of action on climate change may be correct, but little evidence suggests that they are interested in having their assertions tested through an objective, cost-benefit analysis.

Discounting the future, positive illusions, and egocentrism are the most fundamental, innate cognitive reasons why we fail to act to address climate change. But such cognitive explanations are only part of the story.

Organizational Barriers to Acting in Time on Energy

In the United States, at least two significant organizational barriers stand in the way of the implementation of wise energy policy. First, the U.S. government is not currently structured in a way that would allow it to forcefully confront our current energy challenges. Second, government employees often are not trained in the methods needed to implement wise energy policies.

The way in which any organization is structured affects how it collects, processes, and uses information. A common problem is that organizational “silos”—storehouses of information and resources that only certain people can access—prevent an organization from acting in time. Prior to 9/11, no single agency or individual in the United States government had the specific task of managing homeland security, despite significant terrorist threats. The nation had a “terrorism czar,” but no organization to support his staff’s activities. Only after 9/11 was the Department of Homeland Security created. Similarly, no single department is responsible for ensuring that the country is making wise decisions regarding climate change, or energy management more broadly. While we do have an Energy Department, civilian energy is a very small part of the Department’s activities. No single unit is in charge of scanning the environment and collecting information on climate change, analyzing that information, and transforming it into effective policy. The United States, like other nations, developed structures for historic and institutional reasons that have not been adapted to meet current threats. Working with Congress, the next presidential administration needs to set up structures that are better suited to the development and implementation of wise energy decisions (Ogden, Podesta, and Deutch, 2008).

The second organizational barrier to acting in time has to do with what government employees in departments related to energy and the environmental have been trained and rewarded to do. Both the EPA and the Department of Interior have developed regulatory regimes over the past 35 years that are based on a command-and-control structure. Government employees have been trained to penalize corporations and landowners that act against established standards (Hoffman, 1997). Some presidential administrations have set tougher standards and enforced them more strictly than others, but the nature of the regulatory structure has remained. Once regulations are created, government employees adopt a compliance mindset that attenuates the creative search for more economically and environmentally efficient choices that might deviate from the standard (Tenbrunsel, Wade-Benzoni, Messick, and Bazerman, 1997).

In response to such inefficiency, two fascinating programs were developed in the 1990s specifically to help create wiser tradeoffs between environmental and private interests regarding environmental issues: Project XL and Habitat Conservation Plans (HCPs). As part of the Clinton administration’s goal of “reinventing government,” both programs offered relief on specific regulations in return for overall superior environmental performance.

In May 1995, the EPA introduced Project XL (eXcellence and Leadership) to foster cooperation with regulated companies in the development of more cost-efficient and effective environmental protection. Project XL gives corporations greater flexibility in achieving the government's environmental objectives, provided they meet current regulatory standards. Specifically, companies receive regulatory relief in return for "superior environmental performance" as compared to a baseline. Overall, proposals under Project XL had to produce private and regulatory cost savings, be supported by stakeholders, and avoid shifting safety risks to other potentially affected parties (US EPA, 1999).

Unfortunately, Project XL achieved limited success. The number of projects approved and implemented fell short of the EPA's initial objectives. Nearly 27,000 facilities released hazardous and toxic materials in 2000 (Hoffman, Riley, Troast, and Bazerman, 2002), yet only three XL projects were proposed that year, the final year of the Clinton administration. As part of its tendency to unilaterally weaken environmental regulation and enforcement rather than encouraging cooperation between environmental and private interests, the Bush administration closed down Project XL to new proposals in 2003. In the end, the number of terminated or inactive XL projects was greater than the number of projects implemented and completed.

Congress introduced HCPs in 1982 as an antidote to the shortcomings of the Endangered Species Act (ESA). Enacted in 1972, the ESA prohibits the "take" of any federally listed animal or plant species considered "endangered" or "threatened" from public or private land. To "take," as defined in the ESA, means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or attempt to engage in such conduct" (ESA, Section 3[18]). The ESA's prohibition on taking protected species can impose severe land-use restrictions that, for many landowners and developers, appear to violate sacrosanct private property rights without just compensation. The ESA set up an adversarial conflict between the government and landowners that created incentives contrary to the objectives of species protection. For instance, some landowners have destroyed species habitat, choosing to "shoot, shovel, and shut up," in the words of one landowner, for fear of government intervention (Crismon, 1998).

HCPs were created to allow landowners to negotiate compliance with the ESA while retaining control of their land. HCPs allow the "incidental taking" of endangered species in exchange for a commitment by the landowner to provide enhanced protection for the

species over a longer time horizon. For the first ten years of the program, HCPs saw little use (Noss, O'Connell and Murphy, 1997). In 1995, Secretary of the Interior Bruce Babbitt began to promote HCPs as a useful tool, and large scale plans (in excess of 1,000 acres) were proposed.

Just as Project XL failed to catch on, HCPs have not been fully accepted as a new form of cooperation between public and private interests. While the HCP process still exists, its use has been disappointing. The departure of Clinton and Babbitt reduced the creativity that had existed within the Department of the Interior. In addition, both HCPs and Project XL ended up being far more complex and bureaucratic than their creators envisioned.

At their core, Project XL and HCPs were wise environmental policies. They were capable of promoting the kinds of creative tradeoffs that we teach our graduate and executive students to explore. Why were these excellent ideas so difficult to implement? Only by identifying the core, taken-for-granted beliefs of regulatory institutions such as the EPA can we understand the persistence of inefficient regulatory design and the barriers to acting in time on energy. To allow the next administration to implement the wise energy and environmental policies needed to act in time, we must change how individuals think and how institutions guide that thinking.

Institutions are comprised of the laws, rules, protocols, standard operating procedures, and accepted norms that guide organizational action (Scott, 1995). Members of institutions who adopt these laws, protocols, and norms gradually come to behave by force of habit. In turn, habit creates resistance to change and leads institutional members to reject new forms of regulatory policy. Project XL and HCPs represented revolutionary change that was met with resistance caused by years of institutional inertia.

Moreover, for cooperative regulatory reform to work, trust between parties is essential (Ruckelshaus, 1996). Voluntary information sharing and regulatory flexibility are at the heart of Project XL and HCPs, yet both are anathema to many bureaucratic departments of government. Indeed, the United States has traditionally shunned creating the kind of cooperative regulations that are common in Asian and European countries. As one editorialist quipped about the EPA: "Does anyone truly believe that any government bureaucracy - especially one so deeply suspicious of the regulated community, an agency that measures its worth by its annual tally of convictions of environmental miscreants - would

actually be willing to bargain away its birthright?” (Harris, 1996a: 4). Giving up control, as well as the idea of “negotiating” environmental improvements, may appear to some regulators to be contrary to their mandate of protecting the environment.

Furthermore, regulators may resist the shift from command-and-control to cooperative regulation for fear of losing responsibilities, power, and competence. Organizational confusion and turf wars between rival departments can be the inevitable result. Anne Kelley, a staff member of the EPA’s New England Region, had this to say about reinvention efforts and Project XL: “I represented a tiny office that came [to the EPA] begging for open-mindedness, but unfortunately most in the agency locked arms against reinvention” (Kelley, 2000). In several Project XL negotiations, companies complained that EPA staff assigned to the project lacked the authority needed to make decisions and the resources needed to support the project adequately. In addition, government scientists were not given the negotiation training they needed to successfully hammer out complex deals with business interests, write Hoffman, Riley, Troast, and Bazerman (2002).

In sum, beyond identifying wise policies, the next administration must anticipate and address aspects of government organizations that will prevent the successful implementation of new ideas aimed at acting in time to solve energy problems.

Political Barriers to Acting in Time on Energy

The failure of the U.S. government to pass meaningful and sufficient campaign-finance reform laws perpetuates a system in which money corrupts the potential for a wise decision-making process on energy policy. Well-funded and well-organized special-interest groups, concentrated constituencies intensely concerned about a particular issue, have disproportionate influence on specific policies, at the expense of millions who lack a strong voice on that issue.

Experienced at subverting good ideas, leading organizations from the auto, coal, and oil industries (e.g., ExxonMobil) have succeeded in distorting energy politics and keeping the United States from implementing wise practices regarding climate change. These special-interest groups lobby elected officials against acting in time to prevent climate change and will continue to try to do so. They stall reforms by calling for more thought and study, or simply by donating enough money to the right politicians so that wise legislation never even

comes to a vote. Their efforts effectively turn Congress and the president away from the challenge of making wise energy decisions.

Special-interest groups that want to block better policies use a key tool: obfuscation. The tobacco industry successfully relied on obfuscation to block regulation for decades. The industry knew about the harms of cigarette smoking, and then second-hand smoke, long before the public did. To avoid or slow down anti-smoking measures, the tobacco industry created confusion about the effects of smoking through misleading advertising and industry-funded “research.” Similarly, vocal representatives of the coal, oil, and automobile industries first obfuscated about the existence of climate change, then about the role that people play in the problem, and now about the magnitude of the problem (<http://www.campaignexxonmobil.org/>). And, with occasional exceptions, these industries have failed counter the obfuscations of ExxonMobil and other companies that have heavily invested in distorting the debate. Obfuscation works: as I have described, people are less willing to invest in solving problems perceived of as uncertain.

In part due to industry-sponsored obfuscation, any elected official who supports measures aimed at combating climate change can expect constituents to question the wisdom of incurring the substantial costs of action, especially if those costs include new taxes on SUVs, gasoline, and so on. Public officials are faced with the dilemma of imposing costs (such as gas taxes) on the current generation for a problem that is out of focus for many constituents. Without knowledge of the potentially disastrous long-term effects and costs of climate change, the public is unlikely to enthusiastically endorse these short-term costs. The natural human impulse, as I described earlier, is to discount the future. This uninformed preference keeps the public from endorsing the actions of politicians who accept the need to inflict small costs in the present to avoid a future catastrophe. As recently as the 2008 primary season, politicians clamored to offer the public lower gas prices—proposals rejected by economists and scientists alike as fundamentally unsound. As with other issues, U.S. energy policy will be compromised if we do not also address special-interest group politics and enact meaningful campaign finance reform.

Overcoming Barriers

While I have addressed cognitive, organizational, and political barriers to implementing wise energy policy separately, it is important to recognize that the processes that prevent wise

policy formulation are interconnected. Any plan to act in time on energy must be cognizant of the forces that will work against wise change. Responding to cognitive barriers while ignoring organizational and political barriers will not solve the problem. Similarly, political or organizational change will not occur as long as leaders and citizens are affected by the biases I have documented.

In this final section, I identify a series of principles aimed at attempting to overcome barriers to the implementation of wise energy policies. Rather than trying to develop new policies, I will suggest ways to improve the odds that policies that have already been identified will succeed.

Principle 1: The 2009 U.S. administration should identify energy policies that make wise tradeoffs across issues.

Over 30% of the 40,000 Americans waiting for an organ transplant are likely to die before an organ is found—yet many Americans are buried each year with potentially life-saving organs intact. The majority of European nations have significantly increased organ donation rates by encouraging citizens to accept a simple switch in mindset (Johnson and Goldstein, 2003). Rather than handing out donor cards to those who consent to donate, the government gives citizens the right to opt out of donating their organs; in other words, citizens who do not object are automatically assumed to be organ donors. This change in the default policy has had an enormous effect, more than doubling the effective donation rate. Influenced by those who argue, in essence, that the sanctity of the human body is more sacred than the lives of those awaiting organs, U.S. politicians have not instituted this change.

In my opinion, favoring donors over recipients is a poor tradeoff that cost too many lives – and perhaps, one day, yours or mine. I think most citizens would agree with me if this tradeoff was made clear to them. Few policies are as inefficient as the U.S. organ donation system, but others are quite troubling (Bazerman et al., 2001). Why do we tolerate a legal system that discourages pharmaceutical companies from developing drugs and vaccines that would ease suffering and save lives? Why do we subsidize tobacco farmers to grow a crop directly responsible for close to 430,000 U.S. deaths each year? Why have we depleted many of the world’s most valuable and abundant fishing basins?

And, why haven’t we implemented tougher mileage requirements for cars? Why haven’t we invested more in educating the public about ways to reduce energy usage that

would save them money? Why haven't we developed programs that allow companies to make wise long-term decisions as they build new plants, decisions that would be good for the firm, good for energy conservation, and good for the environment?

My colleagues and I (Bazerman et al., 2001) have argued that many of these failures occur because losses loom larger than gains (Kahneman and Tversky, 1979) in the minds of citizens and politicians. Consider that most policy changes create both gains and losses. Society often misses opportunities for wise tradeoffs—those in which gains significantly exceed losses for all parties—by failing to implement policies that have some costs, even when the gains are far greater. When losses loom larger than gains, we fail to act in time to make decisions that would create a net benefit.

Principle 2: The 2009 U.S. administration should seek near-Pareto improvements and communicate that decisions will be made to maximize benefits to society rather than to special-interest groups.

Rather than fighting over the importance of addressing energy issues, elected officials should work together to identify wise tradeoffs on energy issues. A perfect wise trade would create a policy change that economists call a “Pareto improvement”—a change that would make some people better off and no one worse off. Unfortunately, in a country of 300 million citizens, true Pareto improvements are rare to nonexistent in government policy making. Most changes will require some sacrifices from some members of society. Thus, in most policy domains, we should seek what economist Joseph Stiglitz (1998) calls “near-Pareto improvements”: changes that 1) create vast benefits for some and comparatively trivial losses for others or 2) hurt only a small, narrowly defined special-interest group—often, a group that has already manipulated the political process to its advantage.

I hope that in 2009, the new administration will agree with Stiglitz's argument that “if everyone except a narrowly defined special-interest group could be shown to benefit, surely the change should be made.” Again, the next administration should make this principle transparent from the very start. Obviously, advocating policies connected to campaign finance reform (including public financing of campaigns) would be consistent with this principle.

Principle 3: The 2009 U.S. administration should seek energy policies that make sense even if climate change is less of a problem than best current estimates suggest.

Some changes to energy policy will be difficult to pass into law and to implement, due to uncertainty about the future. Others should be easy. Some actions we could take to reduce greenhouse gases could be beneficial for reasons other than reducing climate change; for example, improvements in energy efficiency could be cost-effective in their own right. Most of us make poor tradeoffs across time due to our tendency to discount the future. We should seek to identify the multitude of policies that would create “no regrets,” regardless of how uncertainties play out. As many politicians have noted, a “no regrets” strategy would be beneficial even if climate change turns out to be a lot of hot air.

Principle 4: The next U.S. presidential administration should identify a series of small changes (nudges) that significantly influence the behaviors of individuals and organizations in a positive direction without infringing on personal liberties.

In their book *Nudge* (2008), Richard Thaler and Cass Sunstein advocate a strategy that they call libertarian paternalism. Essentially, using the cognitive biases described earlier in this chapter, they develop policy suggestions that 1) account for how people actually make decisions and 2) “nudge” people toward making wiser decisions. Thaler and Sunstein’s strategies are “paternalistic” because they manipulate people to act according to the preferences of the policy designers; the strategies are “libertarian” because the policies do not limit individual freedom.

Citing an example of a beneficial nudge, Thaler and Sunstein note that the U.S. Congress developed a wise policy following the Chernobyl disaster by passing the Emergency Planning and Community Right to Know Act. This Act required companies that pollute to create a Toxic Release Inventory. While the act was primarily a bookkeeping measure that had little regulatory teeth, it succeeded in achieving large reductions in toxic releases. How did it succeed? According to Thaler and Sunstein, environmental groups used the Toxic Release Inventory to produce and publicize “blacklists” of polluters. Fearful of negative publicity and falling stock prices, polluters cleaned up their act to avoid being blacklisted – resulting in a phenomenon that Thaler and Sunstein call a “social nudge.”

In an example of a small positive nudge in the realm of energy policy, Thaler and Sunstein (2008) criticize the format of the current fuel economy sticker that is required on all new automobiles. They argue that the sticker would have a much greater impact in reducing gas consumption by providing information more relevant to consumer use. The currently required sticker includes expected miles per gallon on the highway and in the city, some

technical information that is likely ignored by 95% of customers, and comparison information to similar cars in small print. Thaler and Sunstein recommend a sticker that provides highway and city estimates, cuts the technical information, puts the comparison data in an easy-to-read chart, and provides an estimate of the annual fuel cost of driving the car. My intuition is that Thaler and Sunstein's sticker would have a far greater impact on gas consumption than the current sticker. And, other than the manufacturers of fuel-inefficient vehicles, it is hard to imagine who would be against the new sticker.

Another example of a beneficial nudge, this one described in the *New York Times* (July 20, 2008, page 6) comes from the town of Hove, England, which placed “smart meters” to chart electricity usage in citizens’ homes. These meters provide residents with information about how much electricity their homes are currently using: turn on a high-use appliance, and the meter jumps. This simple feedback has not only made Hove residents aware of their energy use; it has also motivated them to conserve energy. The program has been a big success, and the British government is considering placing some version of the smart meter in all 46 million homes in the United Kingdom.

Principle 5: When discounting of the future creates an insurmountable barrier to the implementation of wise policies, consider implementation on a mild delay.

Many wise energy policies require people to make a small-to-medium current sacrifice in return for larger benefits in the future (or to avoid larger future harms). Todd Rogers and I (2007) have shown that such proposals tend to fail because people overweight the immediate costs of implementation. Laibson’s (1994) work on hyperbolic discounting shows that our discount function is not linear, and that its shape resembles a hyperbola. In other words, while most people would prefer \$5 today over \$6 tomorrow, most would also prefer \$6 in 31 days over \$5 in 30 days (Frederick, Loewenstein, O’Donoghue, 2002). Applied to the policy arena, Rogers and I show that people are more likely to support energy policies that have initial costs and long-term benefits when the policies will be implemented in the future—even in the near future—rather than today. While a small delay may create inefficiency, we find large increases in support even for slightly delayed wise policies. Effectively, the small delay gets people to look beyond the steep slope of the loss function created by the current costs.

In Conclusion

As I write this paper, I am sure that others can develop far better ideas for overcoming cognitive, organizational, and political barriers to implementing wise energy policies. My goal has been to focus our attention on the need to confront these barriers to change and to suggest concrete steps to overcome them. If this paper prompts others to develop additional and better strategies to overcome barriers to wise energy policies, it will have served its purpose.

References

- Ackerman, F., & Heinzerling, L. (2004). *Priceless*. New York, The New Press.
- Ariely, D. (2008). *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. New York, HarperCollins.
- Babcock, L. and G. Loewenstein (1997). "Explaining Bargaining Impasse: The Role of Self-Serving Biases." *The Journal of Economic Perspectives* 11(1): 109-126.
- Bazerman, M. H. (2005). *Judgment in Managerial Decision Making*. New York, John Wiley & Sons.
- Bazerman, M. H. (2006). "Climate Change as a Predictable Surprise." *Climatic Change* (Online): 1-15.
- Bazerman, M. H., J. Baron, & Shonk, K. (2001). *You Can't Enlarge the Pie: Six barriers to effective government*. New York, Basic Books.
- Bazerman, M. H. and A. J. Hoffman (1999). Sources of environmentally destructive behavior: Individual, organizational, and institutional perspectives. *Research in organizational behavior*. R. I. Sutton and B. M. Staw. 21: 39-79.
- Bazerman, M. H. and D. Moore (2008). *Judgment in Managerial Decision Making*, John Wiley & Sons, Inc.
- Bazerman, M. H. and M. D. Watkins (2004). *Predictable Surprises: The disasters you should have seen coming and how to prevent them*. Boston, Harvard Business School Press.
- Crismon, S. (1998). *North Carolina Red-Cockaded Woodpecker Habitat Conservation Plan and Safe Harbor. Improving Integrated Natural Resource Planning: Habitat Conservation Plans*. National Center for Environmental Decision-Making Research.
- Crocker, J. (1982). "Biased questions in judgment of covariation studies." *Personality & Social Psychology Bulletin* 8(2): 214-220.

Diekmann, K. A., S. M. Samuels, et al. (1997). "Self-interest and fairness in problems of resource allocation: Allocators versus recipients." *Journal of Personality & Social Psychology* 72(5): 1061-1074.

Frederick, S., G. Loewenstein, & T. O'Donoghue. (2002). "Time discounting and time preference: A critical review." *Journal of Economic Literature* 40(2): 351-401.

Gore, A. (1993). *Earth in the Balance*. New York, Penguin Books USA.

Gore, A. (1997). *White House Commission on Aviation Safety and Security Final Report to President Clinton*.

Greenwald, A. G., R. Gonzalez, et al. (1996). "Effect sizes and p values: What should be reported and what should be replicated?" *Psychophysiology* 33(2): 175-183.

Harris, P. (1996a). "They just don't get it." *Environmental Management Today* 7(4).

Hoffman, A. J., M. H. Bazerman, et al. (1997). "The Endangered Species Act and the U.S. Economy." *Sloan Management Review* Fall 1997: 59-73.

Hoffman, A. J., H. C. Riley, J. Troast, & M. H. Bazerman. (2002). "Cognitive and institutional barriers to new forms of cooperation on environmental protection." *American Behavioral Scientist* 45(5): 820-845.

Johnson, E. J. and D. Goldstein (2003). "Do defaults save lives?" *Science* 302: 1338-9.

Kahneman, D. and A. Tversky (1979). "Prospect Theory: An Analysis of Decision Under Risk." *Econometrica* 47: 263-291.

Laibson, D. I. (1994). *Essays in hyperbolic discounting*. Unpublished doctoral dissertation, MIT. Cambridge, MA.

Langer, E. J. (1975). "The illusion of control." *Journal of Personality & Social Psychology* 32(2): 311-328.

Loewenstein, G. and R. H. Thaler (1989). "Anomalies: Intertemporal choice." *Journal of Economic Perspectives* 3: 181-193.

McGill, A. L. (1989). "Context effects in judgments of causation." *Journal of Personality & Social Psychology* 57(2): 189-200.

Messick, D. M. and K. S. Senti (1983). *Fairness, Preference, and Fairness Biases. Equity Theory: Psychological and sociological perspectives*. D. M. Messick and K. S. Cook. New York, Praeger: 61-64.

Messick, D. M. and K. P. Senti (1985). "Estimating social and nonsocial utility functions from ordinal data." *European Journal of Social Psychology* 15(4): 389-399.

- Noss, R. F., M. A. O'Connell, et al. (1997). *The science of conservation planning: Habitat conservation under the Endangered Species Act*. Washington, DC, Island Press.
- Ogden, P, Podesta, J., & Deutch, J. (2008). *A New Strategy to Spur Energy Innovation*, Center for American Progress, 1/3/08.
- Rawls, J. (1971). *A Theory of Justice*. Cambridge, MA, Harvard University Press.
- Rogers, T. and M. H. Bazerman (2008). "Future Lock-in: Future Implementation Increases Selection of 'Should' Choices." *Organizational Behavioral and Human Decision Processes* 106(1): 1-20.
- Ruckelshaus, W. (1996). *Trust in government: A prescription for restoration*. Webb Lecture series. Washington, DC, National Academy of Public Administration.
- Scott, W. R. (1995). *Institutions and Organizations*. London, Sage Publications.
- Stern, N. (2007). *The Economics of Climate Change: The Stern Review*. Cambridge University Press.
- Stiglitz, J. (1998). "The private uses of public interests: Incentives and institutions." *Journal of Economic Perspectives* 12(2): 3-22.
- Taylor, S. E. (1989). *Positive illusions: Creative self-deception and the healthy mind*. New York, Basic Books.
- Taylor, S. E. and J. D. Brown (1988). "Illusion and well-being: A social psychological perspective on mental health." *Psychological Bulletin* 103(2): 193-210.
- Tenbrunsel, A. E., K. A. Wade-Benzoni, D. A. Messick, & M. H. Bazerman. (1997). The dysfunctional aspects of environmental standards. *Environment, ethics, and behavior: The psychology of environmental valuation and degradation*. M. H. Bazerman, D. M. Messick, A. E. Tenbrunsel and K. A. Wade-Benzoni: 105-121.
- Thaler, R. H. & C. R. Sunstein (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, Yale University Press.
- Tversky, A. and D. Kahneman (1974). "Judgment under uncertainty: Heuristics and biases." *Science* 185(4157): 1124-1131.
- Wade-Benzoni, K. A. (1999). "Thinking about the future: An intergenerational perspective on the conflict and compatibility between economic and environmental interests." *American Behavioral Scientist* 42(8): 1393-1405.
- Wade-Benzoni, K. A., A. E. Tenbrunsel, & M. H. Bazerman. (1996). "Egocentric interpretations of fairness in asymmetric, environmental social dilemmas: Explaining harvesting behavior and the role of communication." *Organizational Behavior & Human Decision Processes* 67(2): 111-126.

Winship, C. and M. Rein (1999). "The Dangers of 'Strong' Causal Reasoning in Social Policy." *Society* 36(5): 38-46.