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A Capacity for Mitigation as the Next Frontier in Homeland Security

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After major disasters, blue-ribbon commissions often investigate why government officials were unable to “connect the dots” and intervene to stop the calamity, but they typically fail to take the next step: building a mitigation capacity to reduce future disaster losses and turn catastrophes into lesser scale events. Pearl Harbor, The Great Mississippi Flood of 1927, Hurricane Andrew, September 11, and, most recently, Hurricane Katrina (among others) spawned investigations into the purported failures of administrators and elected leaders to recognize clues to impending disasters. Each of these cases provides a lesson first identified by Roberta Wohlstetter in her path-breaking *Pearl Harbor: Warning and Decision*: we cannot expect even skilled, technically competent, and well-intentioned organizations to be able to prevent every surprise attack.¹ In the case of natural events, we dare not even attempt interdiction (cloud-seeding notwithstanding), because most natural hazards are part of socio-natural processes that cannot be halted without causing greater calamity. If preventing all disaster is impossible, reducing the damage caused by disasters through improved mitigation capacity is the next most desirable goal. To improve mitigation will not be easy, because doing so requires revising current understandings about what constitutes security from disaster, reorganizing homeland security agencies, and making the politically sensitive argument that not all disasters can be prevented.

Mitigation activities decrease the damage disasters cause to lives and property by anticipating hazards and making communities more resistant to their effects. These steps range from low-cost and relatively simple actions such as

¹ Roberta Wohlstetter, *Pearl Harbor: Warning and Decision* (Palo Alto, CA: Stanford University Press, 1962).

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relocating electrical outlets to more-complex measures that require coordinated action among public agencies, private individuals, and nonprofits, such as buying low-lying land and preventing construction on it or strengthening building codes so that structures better resist the effects of earthquakes, tornadoes, or bombs.² A variety of means promote mitigation, such as hardening structures, building redundancy, and de-centralizing essential networks and services.

If not all disasters can be prevented, mitigation is a crucial but neglected part of preparing for disasters. Thus, mitigation is different from preparing to respond, which includes training and funding for equipment and personnel who go to a disaster site after an event. In addition, many activities that are casually referred to as prevention are actually mitigation efforts. For example, many fire and flood “prevention” programs reduce the effects of an event rather than preventing it from occurring. Prevention refers to measures that stop an event from occurring, as when law enforcement agencies apprehend potential terrorists.

Mitigation is one of a number of strategies that make up disaster preparedness, but the federal government’s current policy documents governing emergency management, primarily the National Incident Management System and Homeland Security Presidential Directives 7 and 8, do not mention mitigation. Instead of “mitigation,” this guidance, created in the wake of September 11, uses the terms *preparedness*, *prevention*, *protection*, *response*, and *recovery* to frame emergency management.

Preparedness is a capacious term, referring to “the existence of plans, procedures, policies, training and equipment necessary at the Federal, State, and local level to maximize the ability to prevent, respond to, and recover from major events.”³ *Prevention*, in the government’s language, is more narrowly defined as “actions taken to avoid an incident or to intervene to stop an incident.”⁴ These include steps taken to interdict terrorist attacks, but their relevance for natural and industrial disasters is unclear. Some natural events cannot be prevented, such as earthquakes, volcanoes, tsunamis, some forest fires, and the rainfall and winds that may lead to flooding. The terms *response* and *recovery* are relatively straightforward. Response activities address the short-term, direct effects of an event, and recovery activities are directed at the long-term effects in order to restore a community to a state close to its condition before the event. Each of these categories of action can reduce the damage caused by disasters, but none of them equals mitigation.

² Charles Perrow, *The Next Catastrophe* (Princeton, NJ: Princeton University Press, 2007).

³ Homeland Security Presidential Directive 8, 17 December 2003; Interim National Preparedness Goal, Department of Homeland Security, 31 March 2005, 1.

⁴ Department of Homeland Security, *National Incident Management System* (Washington, DC: Department of Homeland Security, 2004), 134. The NIMS definition continues: “Prevention involves actions to protect lives and property,” 134. Available at <http://www.dhs.gov/interweb/assetlibrary/NIMS-90-web.pdf>, 14 October 2007. Thanks to Paul Stockton for calling attention to this document.

DISASTER PREPAREDNESS

Disasters are of at least three types.⁵ Natural disasters are precipitated by a meteorological or geological event such as a hurricane or an earthquake, although they become disasters only when they inflict damage on the built or lived environment.⁶ To employ a cliché by way of analogy, if a typhoon occurs in the middle of the ocean, does anyone hear it? Human actions influence the course of disasters by, for example, building in a low-lying area or by removing forests for agricultural purposes and thereby hastening drought.

Technological disasters often occur when complex systems fail. The largest such failures include the Bhopal chemical plant accident of 1984, the Chernobyl nuclear plant accident in 1986, and the *Challenger* explosion of 1986.⁷ Another form of disaster, which includes terrorist attacks, is a deliberate attempt to cause harm to lives and property.

These three forms of disasters share enough in their consequences and in their timelines to be addressed under a single umbrella, whether emergency management or homeland security. Despite the connotation of surprise suggested by the term, disasters are rarely exogenous shocks that catch a community completely unaware. A threatened attack, a record of poor industrial safety, or a history of flooding typically presage an event. The term *disaster* most accurately describes a cycle, beginning with human development of the natural environment, including the event, and lasting through a period of rebuilding and adjustment following the episode. Emergency managers typically refer to these periods as preparedness, response, and recovery.⁸

The way in which federal emergency management institutions have grown over time, however, has led to a system that favors response and, to some extent, recovery, over prevention and especially mitigation. The federal government has intervened in major disasters since the early days of the Republic, but usually only in an ad hoc fashion, providing relief after a major catastrophe.⁹ Requests for aid from localities directly affected by a disaster and from

⁵ E.L. Quarantelli, "Emergencies, Disaster, and Catastrophes Are Different Phenomena," Preliminary paper 304 (Newark, DE: Disaster Research Center, University of Delaware, 2000); E.L. Quarantelli, ed., *What Is a Disaster* (London: Routledge, 1998).

⁶ Thomas Birkland, *After Disaster: Agenda Setting, Public Policy, and Focusing Events* (Washington, DC: Georgetown University Press, 1997), 121; Russell Dynes and Havidan Rodriguez, "Finding and Framing Katrina: The Social Construction of Disaster" in David L. Brunson, David Overfelt, and J. Steven Picou, eds., *The Sociology of Katrina: Perspectives on a Modern Catastrophe* (Lanham, MD: Rowman & Littlefield, 2007), 23–33.

⁷ Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (Princeton, NJ: Princeton University Press, 1999).

⁸ George Haddow and Jane Bullock, *Introduction to Emergency Management*, 2d ed. (Burlington, MA: Butterworth-Heinemann, 2006).

⁹ E.L. Quarantelli, ed., *Disasters: Theory and Research* (Beverly Hills, CA: Sage Publications, 1978); Kathleen J. Tierney, Michael K. Lindell, and Ronald W. Perry, *Facing the Unexpected: Disaster Preparedness and Response in the United States* (Washington, DC: Joseph Henry Press, 2001); Philip

neighboring regions, combined with the spectacle of a major catastrophe, put pressure on the federal government to act to relieve suffering and restore order to disaster-stricken communities. As a result, in recent decades, the national government has played a greater role in policy domains such as emergency management that were once the sole responsibility of states and localities. Disaster organizations at all levels of government have added more programs to aid response than to provide mitigation. National granting programs, such as the Emergency Management Performance Grant program, provide states and localities with resources to purchase response equipment but not to invest in activities to reduce the consequences of disasters.

The nation engages in limited activities under the name of “mitigation,” but these are uncoordinated and minor compared to investments in other types of emergency management support. Through the Department of Homeland Security, the federal government provides grants to states and localities for mitigating the effects of disasters through exercises, although this is essentially preparing to respond, rather than strengthening structures or dispersing materials in order to make sites less vulnerable to disaster. The Army Corps of Engineers and other agencies build structures to reduce the effects of flooding but, as Hurricane Katrina showed, some of their structural mitigation efforts may have done more harm than good in the long run because they have not lived up to the aims associated with them.¹⁰ Efforts to set structural standards for resistance to fires, earthquakes, and floods have been more successful, but localities have the final say on such standards. The resources and attention given to preventative activities before a disaster occurs pale in comparison to those given to response and recovery. Authorities are more likely to devote resources to relieving damage after the policy “window” opens following a catastrophic event than to invest in mitigation of an event that may never occur.¹¹ Politicians and agencies suffer blame when they are perceived to respond poorly to a disaster, but they are less often blamed for failing to anticipate and reduce the consequences of a disaster before it happens. Therefore, there is a greater incentive for public officials to prepare to respond to disasters rather than to attempt to reduce disaster losses over time through means other than response.

L. Fradkin, *The Great Earthquake and Firestorms of 1906* (Berkeley, CA: University of California Press, 2005).

¹⁰ U.S. Army Corps of Engineers, *Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System: Draft Final Report of the Interagency Performance Evaluation Task Force* (United States Army Corps of Engineers, 2006), available at <https://ipet.wes.army.mil/>, 14 November 2007; Raymond Seed et al., *Investigation of the Performance of the New Orleans Flood Protection Systems in Hurricane Katrina on August 29, 2005* (Berkeley, CA: University of California, Berkeley, 2006); Brig. Gen. Stuart Leavenworth, “Will We Ever Learn?” *Sacramento Bee*, 2 July 2006.

¹¹ John Kingdon, *Agendas, Alternatives, and Public Policies*, 2d ed. (Upper Saddle River, NJ: Pearson, 1997); Birkland, *After Disaster*; George J. Busenberg, “Learning in Organizations and Public Policy,” *Journal of Public Policy* 21 (May 2001): 173–189.

RISK VERSUS UNCERTAINTY

The uncertainty present in our world provides a rationale for investing in mitigation rather than coping with catastrophe at uncertain intervals. Most policy assumes a world of risk, in which people can calculate the frequency and severity of a particular type of event and adopt a strategy to increase their ability to withstand its effects. This kind of reasoning suits disasters that occur periodically. For example, flood mapping identifies the rate at which floodwaters will reach a particular height.¹² Policymakers designate floodplains and either restrict construction in those areas or warn their occupants that they should purchase insurance and be prepared to evacuate when flooding occurs.

Policymakers design efforts to prepare for other natural disasters such as earthquakes or fires in the same way. Crime, not typically considered a “hazard,” follows a similar logic. Residents and business owners make decisions about where to locate in part based on their perceptions of the amount of criminal activity in a given area. When concerned, they take steps such as installing bars on their windows, purchasing theft insurance, securing valuables, and employing private security forces in order to prevent crime or to reduce the damage caused by wrongdoing. This way of thinking assumes that a particular hazard will cause damage at a certain rate and that knowledge of the history of that hazard will allow people to plan to withstand its future effects.

The basic assumption, that hazards occur in a world of risk and that the history of a particular hazard can be used to predict future events, serves people well most of the time. At certain times, however, a severe event—one that occurs at the tails of a normal curve—has major effects that upset attempts to behave as if our world were simply one of predictable risk. Frank H. Knight in 1921 and John Maynard Keynes in 1937 understood that in some cases, uncertainty described the state of the world better than estimates of risk exposure:

By “uncertain knowledge” ... I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty.... The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention ... About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know!¹³

Meanwhile, Keynes suggested that for many events, we might only observe the effects of a generator of probability, not the generator itself. In a game of Russian roulette, we know that a pistol has six chambers, just as in a game of

¹² Kris Wernstedt and Robert Hersh, “Climate Forecasts and Flood Planning under the Reign of ENSO,” *Natural Hazards Review* 5 (May 2004): 97–105.

¹³ John Maynard Keynes, “The General Theory,” *Quarterly Journal of Economics* 51 (February 1937): 209–233; Frank H. Knight, *Risk, Uncertainty, and Profit* (Boston: Houghton Mifflin, 1921); Mark Blyth, “Great Punctuations: Prediction, Randomness, and the Evolution of Comparative Political Science,” *American Political Science Review* 100 (November 2006): 493–498.

chance, we know that a die has six sides. Keynes suggested that for some events, such as war, for example, we may observe historical data that show a world that appears to have six-sided die until one day it is suddenly governed by a sixteen-sided die. The upshot of this reality is that in observing political and even seemingly natural events, we cannot observe the generators of probabilities in order to calculate a true model of risk that holds for a predictable period of time. Models of risk estimation convey a false sense of certainty and assurance of accurate prescriptions for events such as natural disasters or belligerent attack.

Most of the time, making decisions as if our world were one of predictable risk works well. Our understanding of probability has allowed us to cope with fluctuations in natural disasters and financial turmoil in ways not imagined by societies that lacked an appreciation of probability.¹⁴ Periodically, however, catastrophic hazards overwhelm the capacities of state and local authorities, private firms, and citizens. For example, the 1994 Northridge, California earthquake was so destructive that it sent insurance markets into turmoil.¹⁵ Risk estimation and probability analyses simply did not predict the magnitude of the event.

The magnitude of the consequences of catastrophic disasters demands that the federal government prepare for them, with the assistance of state and local governments and private organizations. Improving response and recovery alone will never be sufficient, because catastrophic disasters, by definition, are always to some degree a surprise and therefore cannot be eliminated. Furthermore, governments at any level cannot afford massive teams of responders who spend all of their time waiting for rare disasters. Carefully targeted mitigation activities hold the promise of reducing the damage caused by disasters more than improvements in response and recovery could accomplish alone. Policymakers may know that a particular disaster is likely and that it makes sense to reduce the damage that an inevitable hurricane, say, will cause to the Gulf Coast, but governments rarely know when such an event will occur with enough accuracy that it would be cost-effective to have massive response resources devoted to it at all times.

MITIGATION POLICY IN THE FEDERAL GOVERNMENT

Mitigation policy reached its apotheosis during the late 1990s, after the Federal Emergency Management Agency (FEMA) underwent a reorganization prompted by criticism of its poor performance during major disasters. A series of reports criticized the federal government's response to, among other disasters,

¹⁴ Peter L. Bernstein, *Against the Gods: The Remarkable Story of Risk* (New York: John Wiley and Sons, 1998).

¹⁵ Insurance Information Institute *Earthquakes: Risk and Insurance* (New York: Insurance Information Institute, 2006); Frank Nutter, "Financing Catastrophe Risk and the Role of Government" in *Earthquake Insurance: Public Policy Perspectives from the Western United States Earthquake Insurance Summit* (San Francisco, CA: Reinsurance Association of America, 1998), 159–163.

Hurricane Andrew, which devastated south Florida in 1992. A portion of the National Performance Review, a program to rate the effectiveness of federal agencies led by Vice President Al Gore, criticized FEMA's inattention to mitigation. The review compared the ready availability of funds for disaster recovery to the paucity of funds for mitigating the effects of disasters before they strike. The review noted, "Mitigation has been called the most neglected aspect of emergency management."¹⁶ Blue-ribbon panels challenged FEMA to rethink its mission entirely. A 1993 National Academy of Public Administration report said, "It [FEMA] has no strategic planning process for developing a mission and goals for the agency as a whole."¹⁷ The report criticized the agency's national security division, in particular, for its insularity.

Following criticism from blue-ribbon panels and the media, a new FEMA director, James Lee Witt, led a reorganization of the agency that deemphasized its responsibilities for civil defense and national security and put a spotlight on the agency's natural disaster preparedness mission.¹⁸ Witt tapped the knowledge of the emergency management profession to structure FEMA according to the professional consensus on the goals of emergency management.¹⁹ Part of that consensus was the creation of a mitigation directorate, and one year after the 1993 reorganization, FEMA announced:

Mitigation—reducing the impact of natural hazards—is one of the key elements in FEMA's reinvented organizational structure. Director James Lee will raise FEMA's Mitigation efforts from a low-level office to one of its four main branches. In an effort to fulfill its new mission, the new Mitigation Director will place primary emphasis in its first year on developing a national mitigation strategy that has as its objective the development of programs, incentives, mechanism, delivery systems, and funding to reduce the impact of all natural disasters, regardless of the cause. The goal is to change public attitudes about the risk of natural hazards and, in doing so, to reduce the loss of life, property, and the environment by 50 percent over the next 25 years.²⁰

The directorate included programs aimed at reducing losses across a range of natural disasters. For example, the "Flood Safe" program sought to persuade

¹⁶ National Performance Review, *Creating a Government that Works Better and Costs Less: Federal Emergency Management Agency* (Washington, DC: U.S. Government Printing Office, 2003), 13. Quoted in Rutherford H. Platt and Claire B. Rubin, "Stemming the Losses: The Quest for Hazard Mitigation" in Rutherford H. Platt, ed., *Disasters and Democracy: The Politics of Extreme Natural Events* (Washington, DC: Island Press, 1999), 89.

¹⁷ National Academy of Public Administration, *Coping with Catastrophe* (Washington, DC: National Academy of Public Administration, 1993), 41.

¹⁸ Patrick S. Roberts, "FEMA and the Prospects for Reputation-Based Autonomy," *Studies in American Political Development* 20 (Spring 2006): 57–87; Richard T. Sylvester, "Federal Emergency Management Comes of Age: 1979-2001" in Claire Rubin, ed., *Emergency Management: The American Experience, 1900-2005* (Fairfax, VA: Public Entity Risk Institute, 2007).

¹⁹ Roberts, "FEMA and the Prospects for Reputation-Based Autonomy."

²⁰ Federal Emergency Management Agency, *Mitigation: Cornerstone for Building Safer Communities* (Washington, DC: Federal Emergency Management Agency, 1995), 3.

homeowners in flood-prone areas to buy insurance against losses. Although mitigation also may be useful for defending against terrorist attacks—structural mitigation prevented the attack on the Pentagon on September 11 from being worse than it was—during the 1990s, mitigation programs focused primarily on natural hazards. The effect of creating a mitigation directorate was to move the agency away from national security functions toward natural hazards that are more easily mitigated than prevented.

Witt promoted the idea of mitigation, and it began to take root at state and local levels. As a result, mitigation became associated with the policies of his political patron, President Bill Clinton. Upon taking office in 2001, George W. Bush appointed his campaign manager, Joe Allbaugh, as FEMA director. Allbaugh wanted to put the Bush administration's mark on the agency, and the attacks of September 11 provided the opportunity to reinvigorate FEMA's civil defense and counterterrorism efforts. Even before September 11, on 8 May 2001, Allbaugh reestablished the Office of National Preparedness, which had existed from 1981 to 1993, primarily to train first responders to terrorism. In addition, under the Bush administration, FEMA sought to eliminate programs that administration officials deemed inefficient.²¹ One of these was a disaster mitigation program, Project Impact, a program central to FEMA's 1993 reorganization that provided education and grants to build disaster-resistant communities. The program helped retrofit homes and schools, for example, to protect them from structural hazards such as earthquakes. Although the program's funding reached only \$20 million per year at its height, it earned accolades from state and local emergency managers.²²

On 28 February 2001, Allbaugh and President Bush announced the discontinuation of Project Impact as part of a plan to save money and refocus the agency on new priorities. That same day, the Nisqually Earthquake shook Seattle, one of the project's model communities. Seattle's mayor told a national television audience that Project Impact was the reason why the city suffered almost no damage from the 6.8-magnitude earthquake. There is scant evidence that Project Impact actually saved the city; the distance of the earthquake's epicenter from downtown is a more likely cause. The mayor's announcement made for great political theater, though, and his commitment reflected the enthusiasm local leaders had for a program that was in its infancy.

The mayor's testament and protests from FEMA staff and state and local officials convinced Congress to fund Project Impact during the 2001 appropriations process. FEMA did not maintain the same commitment to Project Impact under Bush as it had under Clinton, both because new priorities such as terrorism preparedness competed with mitigation programs, and because the agency

²¹ George D. Haddow and Jane A. Bullock, *Introduction to Emergency Management* (Amsterdam, Netherlands: Butterworth-Heinemann, 2003), 13.

²² Eric Holdeman, "Destroying FEMA," *The Washington Post*, 30 August 2005.

lost experienced mitigators through retirement and attrition.²³ The Department of Homeland Security assumed FEMA's role in coordinating disaster preparedness, and no department leader championed mitigation. In 2005, Department of Homeland Security Secretary Michael Chertoff directed FEMA employees not to become involved in disaster preparedness, because a new directorate within the Department would handle such activities, allowing the agency to focus on response and recovery.²⁴

The Bush administration raised legitimate concerns about the value of mitigation. Was it just another way to use federal money to reward friendly states and localities?²⁵ Mitigation wavered between being a program of open-ended federal grants and a program to educate public officials and private citizens about how to protect themselves against disasters and, only when absolutely necessary, to provide them with financial assistance for specific projects. Bush appointees had several reasons to focus on concerns other than mitigation. Failures of disaster response and recovery drew more-acute public criticism than failures of mitigation—witness the Katrina debacle that dominated headlines long after the event. Furthermore, homeland security policymakers were struggling with how to unify preparation and response for a range of natural and industrial disasters with defense against terrorism, a threat largely avoided by FEMA even at the height of its “all hazards approach” that emphasized the agency's comprehensive disaster responsibilities.

Measuring the value of mitigation programs is difficult because it requires accounting for non-events, but in this respect, it is no different from regulating for other safety and security measures. Recent attempts to document the value of mitigation show that well-thought-out programs, such as those found in FEMA, reduce the damage caused by inevitable fires, floods, earthquakes, and other disasters.²⁶ The most comprehensive study, by the National Institute of Building Sciences Multihazard Mitigation Council, found that on average, a dollar spent by FEMA on hazard mitigation provides about \$4 in future benefits while also saving lives.²⁷ To the extent that mitigation promotes a sustainable or resilient natural environment, it has benefits that are not adequately evaluated by economic measures. For example, preventing severe drought

²³ For an analysis of politicization in FEMA, see David Lewis, *Politicizing Administration* (Princeton, NJ: Princeton University Press, forthcoming).

²⁴ Chris Strohm, “New Preparedness Directorate at DHS Up and Running,” *Government Executive*, 4 January 2006.

²⁵ Platt and Rubin, “Stemming the Losses,” 69–110.

²⁶ *Measuring Mitigation: Methodologies for Assessing Natural Hazard Risks and the Net Benefits of Mitigation* (Geneva, Switzerland: International Federation of Red Cross and Red Crescent, 2004); Hank Jenkins-Smith and Howard Kunreuther, “Mitigation and Benefits Measures as Policy Tools for Siting Potentially Hazardous Facilities: Determinants of Effectiveness and Appropriateness,” *Risk Analysis* 21 (April 2001): 371–382.

²⁷ *Natural Hazard Mitigation Saves: An Independent Study to Address the Future Savings from Mitigation Activities* (Washington, DC: Multihazard Mitigation Council, National Institute of Building Sciences, 2005), available at <http://www.nibs.org/MMC/mmactiv5.html>, 14 November 2007.

preserves wildlife, fish, forests, and natural ecosystems that might otherwise be damaged.²⁸

MITIGATION AND THE CHALLENGES OF THE AMERICAN POLITICAL SYSTEM

For all the difficulties of measurement, mitigation is key to improving disaster response and should be a central part of homeland security in the twenty-first century. Politicians are concerned about being blamed for poor disaster response, and after Katrina, FEMA and the White House received an extraordinary amount of blame for the damage caused by the hurricane, even though both entities stressed that response was first and foremost a state and local responsibility.²⁹ Disaster losses increased throughout the twentieth century and will probably continue to increase because of greater development in vulnerable locations (leaving aside the question of whether weather patterns have become more severe). If the Great Miami Hurricane of 1926 struck today, it would be the most damaging hurricane to make landfall since records have been kept, far outpacing Katrina, because of the dense development in southern Florida.³⁰ Improving disaster warning and response will save lives and some property, but because of increased development, only relocating property or protecting it against inevitable fires, floods, hurricanes, and other disasters will reduce disaster losses over time.

A renewed focus on mitigation may also help bring cohesion to efforts to prepare for many different kinds of disasters. Protecting physical structures from high-impact events by, for example, strengthening building codes or erecting barriers around buildings, can protect structures from floodwaters, fire, and terrorist attack at the same time. These structural improvements will not prevent disaster, but they may reduce its effects. In contrast, hardening airplane cockpit doors prevents attack through deterrence by making it more difficult for terrorists to take control of an airplane. Prevention measures are usually hazard specific, but protection measures often apply across a range of hazards. The Department of Homeland Security could usefully encourage protection efforts that would be most likely to reduce disaster losses across a range of hazards.³¹

The American political system poses four major challenges to a greater emphasis on mitigation. Beyond the importance of disaster policy, these four challenges provide a window into the frustrations of policymaking in a repre-

²⁸ Peter H. Gleick and Linda Nash, *The Societal and Environmental Costs of the Continuing California Drought* (Berkeley, CA: Pacific Institute for Studies in Development, Environment and Security, 1991).

²⁹ Christopher Cooper and Robert Block, *Hurricane Katrina and the Failure of Homeland Security* (New York: Times Books, 2006).

³⁰ (Assumes adjusting hurricane losses for inflation, the growth in coastal properties, and real growth in property values.) Roger Pielke and Christopher Landsea, *Memo* (New York: Insurance Information Institute, 2005).

³¹ Lynn Eden, Michael May, and Jacob Shapiro, *An Analytic Approach to Preparedness for Homeland Security* (Washington, DC: DFI International, 2006).

sentative democracy in a large republic. A range of policies for securing public goods, from transportation to environmental policy, face similar challenges. First, democratic decision-making is best suited to a brief time horizon, although disasters occur only rarely over the long term in a particular location. Individuals struggle to make good decisions about rare events because of certain cognitive tendencies; individuals focus on short-term feedback, tend to see the future as an extrapolation of the present, and discount uncertain future rewards compared to short-term costs.³² Politicians responding to incentives in the political system are focused on reelection every several years, except in rare instances in which the public demands sustained attention to an issue.³³

The period immediately after a disaster is the time when politicians are most likely to devote attention to hazards, but the recovery period is also the time when the government most often provides assistance that subsidizes risky behavior. Recovery aid that, for example, helps people rebuild in floodplains or along hurricane-prone coastlines uses public money to subsidize risk for which only private citizens, typically homeowners or business owners, reap the rewards. Government assistance to rebuild after a disaster is far more likely to subsidize risky behavior than mitigation assistance.

Second, recent works of social science have shown how the nature of a policy debate changes as its terms are reframed.³⁴ Republicans reframed a debate over what was once termed “estate taxes” as a battle over “death taxes” and, in doing so, tapped a network of principled anti-tax conservatives for support.³⁵ What counts as a disaster is as muddy an issue as what counts as a tax, and how politicians define disaster shapes how government might prepare for it.³⁶ For example, hurricanes count as disasters, whereas deadly heat waves or droughts are only occasionally or after the fact labeled disasters in the United States.³⁷ Sociologist Gary Kreps summarizes the scholarly consensus on the matter in his definition of disaster as “nonroutine events in societies or their largest subsystems

³² Robert Meyer, “Why We Under-Prepare for Hazards” in Ronald J. Daniels, Donald F. Kettl, and Howard J. Kunreuther, *On Risk and Disaster: Lessons from Hurricane Katrina* (Philadelphia, PA: University of Pennsylvania Press, 2006), 153–174; Mark J. Browne and Robert E. Hoyt, “The Demand for Flood Insurance: Empirical Evidence,” *Journal of Risk and Uncertainty* 20 (May 2000): 291–306.

³³ David R. Mayhew, *Congress: The Electoral Connection* (New Haven, CT: Yale University Press, 1974); David R. Mayhew, *Electoral Realignments: A Critique of an American Genre* (New Haven, CT: Yale University Press, 2002).

³⁴ George Lakoff, *Moral Politics* (Chicago, IL: University of Chicago Press, 1996); Erving Goffman, *Frame Analysis: An Essay on the Organization of Experience* (New York: Harper & Row, 1974).

³⁵ Michael J. Graetz and Ian Shapiro, *Death by a Thousand Cuts* (Princeton, NJ: Princeton University Press, 2005).

³⁶ Gary A. Kreps, “Disaster as Systemic Event and Social Catalyst” in Quarantelli, ed. *What Is a Disaster*, 34; E.L. Quarantelli, “Catastrophes are Different from Disasters: Some Implications for Crisis Planning and Managing Drawn from Katrina,” Social Science Research Council, 26 September 2005, available at <http://understandingkatrina.ssrc.org/Quarantelli/>, 14 November 2007.

³⁷ Eric Klinenberg, *Heat Wave: A Social Autopsy of a Disaster in Chicago* (Chicago, IL: University of Chicago Press, 2002).

(e.g., regions, communities) that involve social disruption and physical harm. Among the key defining properties of such events are 1) length of forewarning, 2) magnitude of impact, 3) scope of impact, and 4) duration of impact.”³⁸

The federal government in the contemporary United States assumes more responsibility for disasters than for mere accidents, which include transportation and home accidents. Accidents are considered more the responsibility of private individuals and firms than of the federal government. Disasters have a greater impact over a shorter duration than accidents, and this relatively brief, concentrated impact prompts national attention when the consequences are severe and long-lasting. Michelle Landis Dauber shows how members of Congress and some presidents in the generally limited state of the nineteenth century assumed that providing relief from major disasters was one of the central responsibilities of national government.³⁹ The nineteenth-century government addressed disasters as they occurred, in an ad hoc fashion, because it was assumed that they were unpredictable. Unlike accidents, disasters are comparatively rare and, thus, characterized by a degree of uncertainty.

The federal government should clarify what counts as a disaster, and what kinds of disasters merit federal responsibility. Traditionally, the federal government has been most concerned about preparing for disasters that are so rare that they overwhelm the capacity of state and local authorities. These strike at an unpredictable time and cause unexpectedly high economic, social, and human costs in terms of lost economic productivity, social disruption, and loss of life. It is relatively easy, however, for states, localities, and private firms to complicate this definition in order to request more resources for disasters that do not truly require federal assistance.

Ardent libertarians might recommend that the federal government forgo providing disaster assistance and that the states form compacts to cooperate in providing emergency assistance. But if all states joined in a compact, they would act just like a national government. The Articles of Confederation operated through agreements among states, but the transaction costs of multiparty agreements proved too high. Today, states only rarely agree on mutual assistance compacts, probably because of high transaction costs. The national government can set standards and coordinate assistance in a much cheaper and more effective way than agreements among 50 states. Nevertheless, the scope of national responsibility remains uncertain; states and localities are reluctant to give federal agencies authority over traditionally local matters such as zoning but are eager to blame federal agencies in the wake of disaster.

Third, disasters have political consequences that draw attention to the event and the immediate response rather than the long-term causes of disaster

³⁸ Kreps, “Disaster as Systemic Event,” 34.

³⁹ Michele Landis Dauber, “The Sympathetic State,” *Law and History Review* 387 (Summer 2005): 387-442; Michelle L. Landis, “Let Me Next Time Be ‘Tried by Fire’: Disaster Relief and the Origins of the American Welfare State, 1789-1874,” *Northwestern University Law Review* 967 (1998): 967-1034.

that can be addressed through mitigation.⁴⁰ Disasters can either build support for elected officials who are perceived to handle a crisis well, or erode support for officials perceived to have performed poorly. Franklin Delano Roosevelt remained in office for an unprecedented 12 years in part because of the political consequences of the surprise attack on Pearl Harbor, and George W. Bush attained reelection on the strength of his performance after September 11.⁴¹ In other cases, political officials deemed responsible for disaster suffer blame. Louisiana Governor Kathleen Blanco decided against running for reelection in part because she suffered blame for her performance during Katrina.⁴²

Less obvious but no less profound, catastrophes thrust new concerns onto the policy agenda that dominate political discussion at the expense of other issues. Massive federal investments in new programs and substantial administrative reorganization often follow catastrophic disasters because of pressure to “do something” immediately after a crisis.⁴³ In the midst of the Great Depression in 1932, President Herbert Hoover created the Reconstruction Finance Corporation to lend money to banks, states, and localities to dispense money in the wake of a disaster. Civil defense organizations (and funding) reached their peak after the Berlin Crisis, a disaster averted in 1961, in which the Soviet and American military engaged in a standoff.⁴⁴ In 1979, President Jimmy Carter created FEMA as an amalgam of more than 100 federal disaster and civil defense preparedness agencies in response to two concerns. First, federal agencies struggled to coordinate responses to a series of natural disasters. Second, a rash of airline hijackings and the well-publicized killings of 17 Israeli athletes by Palestinian militants at the 1972 Munich Olympics put terrorism on the public agenda. The National Governor’s Association, among others, recommended creating a single federal disaster preparedness organization, and Carter proposed FEMA soon after.⁴⁵ Most recently, September 11 spawned a massive reorganization that resulted in the Department of Homeland Security.⁴⁶

⁴⁰ Michael May, “Nuclear Terrorism” (paper presented at the University of California Institute on Global Conflict and Cooperation conference on U.S. National Security, San Diego, CA, 18 January 2006).

⁴¹ James Ceaser and Andrew Busch, *Red Over Blue: The 2004 Elections and American Politics* (Lanham, MD: Rowman & Littlefield, 2005).

⁴² Douglas Brinkley, *The Great Deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast* (New York: William Morrow, 2006).

⁴³ James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989), 264–265.

⁴⁴ John F. Kennedy, “Radio and Television Report to the American People on the Berlin Crisis,” July 1961; Wayne Blanchard, “American Civil Defense 1945-1975” (Ph.D. diss., University of Virginia, 1980); Wayne Blanchard, “American Civil Defense 1945-1984” (monograph, National Emergency Training Center, Emmitsburg, MD, 1985).

⁴⁵ *Domestic Terrorism* (Washington, DC: Center for Policy Research, National Governors’ Association Emergency Preparedness Project, 1978), 107.

⁴⁶ Dara Kay Cohen, Mariano-Florentino Cuellar, and Barry R. Weingast, “Crisis Bureaucracy: Homeland Security and the Political Design of Legal Mandates,” *Stanford Law Review* 59 (December 2006): 673–759.

Finally, it is far from clear what role the federal government should have in mitigation policy. The public benefits from reducing disaster losses because the federal government ends up paying recovery costs, and the United States loses productive capacity to disasters each year. Authority over mitigation measures, however, rests in the hands of states, localities, private firms, and citizens, and the federal government can, at best, provide useful information and financial incentives.⁴⁷ In certain cases, usually involving the storage of hazardous materials or the siting of federal facilities, it can directly engage in mitigation.

State and local hazard mitigation is now pursued in an ad hoc fashion outside a few urban centers with the resources to organize such efforts. According to the Disaster Mitigation Act of 2000, state and local governments are required to have approved hazard mitigation plans, which may include risk assessments, in order to be eligible for certain funds such as those available from the Hazard Mitigation Grant Program. In the last major review of local mitigation plans, conducted in August 2005, jurisdictions representing only 37.44 percent of the nation's population had adopted plans. Thomas L. Carr speculates that the low adoption rate may be caused by "multiple philosophies, misinterpretations, or limited local capacity, capability, competence, or support...."⁴⁸ Because there is no single risk assessment accrediting body, the character of these mitigation plans varies. FEMA's HAZards United States geographic information systems-based software provides a probabilistic estimate of damage, including loss of life, and a template for risk assessment.⁴⁹ Many of the models are still in development, however, and require more historical data and mapping of critical infrastructure.

MITIGATION AND THE FUTURE OF HOMELAND SECURITY

Making mitigation a central part of homeland security strategy requires overcoming challenges presented by the American political system. There is no simple solution, but any attempt to institutionalize mitigation policy must keep these challenges in mind and plan for them. A mitigation directorate might, for example, be provided with some insulation from the biannual budget cycle in order to avoid short-term incentives to use mitigation policy as a way to deliver immediate political rewards to friendly districts rather than reduce disaster losses over the long term. Institutionalizing mitigation policy requires sustained political articulation, the knowledge of experts, and support at several

⁴⁷ Peter J. May, "FEMA's Role in Emergency Management: Examining Recent Experience," *Public Administration Review* 45 (January 1985): 40–48.

⁴⁸ Thomas L. Carr III, "A Study of Local Governments Participating in the Pre-disaster Mitigation (PDM) Program and Populations Served," *Journal of Homeland Security and Emergency Management* 4 (2007): 1–34.

⁴⁹ See <http://www.fema.gov/plan/prevent/hazus/index.shtml>, 14 November 2007.

levels of government, as has been the case with other successful general interest reforms in American politics.⁵⁰

If the ideas and institutions of homeland security are to succeed and persist longer than a generation, they must be about more than terrorism. A department devoted to security must consider the chief threats to security, defined as predictability and stability, and identify a mission that furthers security.⁵¹ Other agencies are responsible for combating crime or economic dislocation, but catastrophic disasters remain under the purview of the Department of Homeland Security. Mitigating the effects of disasters before they happen is a central part of security from instability.

Greater emphasis on mitigation makes sense as part of a disaster preparedness strategy because improved response and recovery alone will not eliminate disasters. The risk and uncertainty present in the world mean that human actions cannot prevent all disasters from happening. Extreme weather events follow natural patterns only loosely connected to human activity. Despite well-honed safety procedures at industrial plants, technological disasters may be “normal accidents,” or the inevitable result of complex technologies.⁵² Governments sometimes prevent terrorist acts, but in the aggregate, terrorism is a recurrent phenomenon, and humans have always conducted deliberate attacks against their perceived adversaries.

Making mitigation a central part of national disaster preparedness, however, requires that elected leaders accept and act upon the politically sensitive admission that not all disasters can be prevented. This admission is in tension with the strategy of the “War on Terror,” which implies that terrorism is an adversary that can be defeated. On 20 September 2001, the President told Congress that “any nation that continues to harbor or support terrorism will be regarded as a hostile regime.... [The war] will not end until every terrorist group of global reach has been found, stopped, and defeated.”⁵³ Major terrorist attacks on the United States have spawned global wars on terror before; after an anarchist assassinated President William McKinley in 1901, new president Theodore Roosevelt began a campaign against terrorism everywhere.⁵⁴ The anarchist campaign, however, was a disparate movement against established Western institutions and governments, much like the efforts of al Qaeda

⁵⁰ Eric Patashnik, “After the Public Interest Prevails: The Political Sustainability of Policy Reform,” *Governance* 16 (April 2003): 203–234; Martha Derthick and Paul J. Quirk, *The Politics of Deregulation* (Washington, DC: Brookings Institution, 1985).

⁵¹ Stephen Collier and Andrew Lakoff, “How Infrastructure Became a Security Problem” in Myriam Ann Dunn, Myriam Dunn Cuveltry and Kristian Suby Kristensen, eds., *Securing ‘the Homeland’: Critical Infrastructure, Risk and Securitisation* (London: Routledge, 2008).

⁵² Perrow, *Normal Accidents*.

⁵³ George W. Bush, “Address to a Joint Session of Congress and the American People,” Washington, DC, 20 September 2001.

⁵⁴ Richard B. Jensen, “The United States, International Policing and the War against Anarchist Terrorism,” *Terrorism and Political Violence* 13 (Spring 2001): 15–46.

today. Terrorism is best conceived of as a tactic employed periodically over time, and successive movements have employed terrorist tactics during the twentieth century: anarchists, anti-colonialists, the new left, and now Islamic extremists.⁵⁵ Interdiction and prevention remain important parts of counter-terrorism strategy, but the number of movements in the twentieth century that have employed terrorist tactics makes it unrealistic to think that all terrorism can be defeated. Mitigation strategies can help reduce losses from terrorism as well as from natural and technological disasters by, for example, investing in stronger buildings and dispersing concentrations of valuable targets.⁵⁶

The challenge for disaster planners in the twenty-first century is to fold responsibility for mitigation into a system of accountability for disasters. The 9/11 Commission found that the most important failure leading up to the attacks was one of imagination. The House Select Committee on Katrina found that the most important failure leading up to that disaster was one of initiative.⁵⁷ Despite the vast differences between these disasters, the failures of imagination and initiative share something in common. Both imagination and initiative require a coordinated system to foresee possible disasters and to make and rehearse plans so as to be ready for disaster, no matter what the cause, when it occurs. Many organizations, federal, state, local, and private, have previously failed to take effective action to plan for a disaster that was, however horrific, by no means unanticipated. For example, New Orleans had long been vulnerable to hurricanes and flooding, and a terrorist had attacked the World Trade Center before the events of September 11.

In the age of homeland security, federal, state, and local governments are preparing for disasters under the mantra of “all hazards,” which means that resources should be allocated to activities that support preparedness for all kinds of disasters. It remains an open question whether terrorism and industrial accidents have enough in common with fires, floods, and hurricanes for all of these to be treated with a single set of skills. These hazards, however, have enough in common to make possible the sharing of resources, ideas, and especially a timeline framework. For all hazardous events, one can practice mitigation by reducing the consequences of an event. Once the event occurs, the response phase begins, followed by recovery. U.S. strategy should treat mitigation, and not just response, recovery, or even exercises and drills that are part of preparing to respond, as an important part of the disaster timeline.*

⁵⁵ Martha Crenshaw, “Introduction: Thoughts on Relating Terrorism to Historical Contexts” in *Terrorism in Context* (State College, PA: Pennsylvania State University Press, 1994); Martha Crenshaw, “‘New’ versus ‘Old’ Terrorism,” *Palestine-Israel Journal of Politics, Economics and Culture* 10 (Winter 2003): 48–53.

⁵⁶ Perrow, *The Next Catastrophe*.

⁵⁷ U.S. House of Representatives Select Bipartisan Committee to Investigate the Preparation for and Response to Katrina (House Report) (Washington, DC: Government Printing Office, 2006), 185.

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