

The Architecture of Government in the Face of Terrorism

Ashton B. Carter

On September 11, 2001, the post–Cold War security bubble finally burst. In the preceding ten years, the United States and its major allies failed to identify and invest in the prevention of “A-list” security problems that could affect their way of life, position in the world, and very survival. Instead they behaved as if gulled into a belief that the key security problems of the post–Cold War era were ethnic and other internal conflicts in Bosnia, Somalia, Rwanda, Haiti, East Timor, and Kosovo. Peacekeeping and peacemaking in these places, although engaging important humanitarian concerns, never addressed the vital security interests of the United States, and none of these conflicts could begin to threaten its survival. As if to confirm this point, the official military strategy of the United States during the last decade centered not on peacekeeping but on the challenge of fighting two Desert Storm reruns, one in Korea and one in the Persian Gulf, at the same time. The two-major-theater-war doctrine at least had the virtue of addressing threats to vital U.S. allies and interests. But as the decade wore on, it was increasingly apparent that although important interests were at stake in both major theaters, in neither was U.S. survival in question. The A-list seemed empty, so policy and strategy focused on B- and C-level problems instead.¹

A-list threats, such as the threat posed by the Soviet Union for the preceding half-century—were indeed absent, but only if threat is understood as the imminent possibility of attack defined in traditional military terms. If taken instead to denote looming problems that could develop into Cold War–scale dangers, the A-list contained at least four major underattended items in the

Ashton B. Carter is Professor of Science and International Affairs at Harvard University's John F. Kennedy School of Government and Co-director of the Preventive Defense Project, a research collaboration of the John F. Kennedy School of Government and Stanford University.

The author is grateful for the support of the Carnegie Corporation of New York, the John D. and Catherine T. MacArthur Foundation, the Packard Foundation, the Simons Foundation, and the Herbert S. Winokur, Jr. Fund for support of this work. The author has benefited from discussions with William J. Perry, John P. White, and Herbert S. Winokur, Jr., and from the editorial and research assistance of Gretchen M. Bartlett in the preparation of this article.

1. This argument and the corresponding A-, B-, and C-lists are derived from Ashton B. Carter and William J. Perry, *Preventive Defense: A New Security Strategy for America* (Washington, D.C.: Brookings, 1999).

International Security, Vol. 26, No. 3 (Winter 2001/02), pp. 5–23
© 2001 by the President and Fellows of Harvard College and the Massachusetts Institute of Technology.

1990s: (1) the collapse of Moscow's power, (2) the growth of Beijing's military and economic might, (3) proliferation of weapons of mass destruction, and (4) the prospect of catastrophic terrorism. Upon taking office, George W. Bush and his administration claimed to be formulating their strategy around the first two of these items, in a self-proclaimed return to big power realism. But in the wake of the World Trade Center and Pentagon attacks of September 11, the Bush administration is instead finding its agenda dominated by catastrophic terrorism, for which it appears no more or less prepared than its predecessor Bush, Sr., and Clinton administrations.

The challenge of catastrophic terrorism is destined to be a centerpiece of the field of international security studies, and thus of the readers and writers of the pages of this journal, for the foreseeable future. Today the focus is a particular nest of Islamic extremists operating freely from the lawless failed state of Afghanistan. But the last time that a building in the United States was destroyed in a terrorist attack, the Alfred P. Murrah Federal Building in Oklahoma City in April 1995, the perpetrator was homegrown, an embittered American nihilist operating in the vast anonymity of modern society. One month earlier, an obscure cult in Japan put sarin nerve gas in a Tokyo subway and attempted an airborne anthrax release. Indeed the varieties of extremism that can spawn catastrophic terrorism seem limitless, and they have not been studied as thoroughly by social scientists as have the dynamics of great power rivalry. What is clear is that war-scale destructive power is becoming increasingly available as technology advances. The same advances heighten the complexity and interconnectedness of civilization, making society more vulnerable at the same time it delivers to small groups destructive powers that were formerly the monopoly of states. Thus if security is understood to be the avoidance and control of mass threat, catastrophic terrorism must occupy a central place in security studies, a status that "ordinary" non-mass terrorism never achieved.²

2. Studies dealing with catastrophic terrorism include: Richard A. Falkenrath, Robert D. Newman, and Bradley A. Thayer, *America's Achilles' Heel: Nuclear, Biological, and Chemical Terrorism and Covert Attack* (Cambridge, Mass.: MIT Press, 1998); "A False Alarm (This Time): Preventive Defense against Catastrophic Terrorism," in Carter and Perry, *Preventive Defense*, pp. 143–174; Ashton B. Carter, John M. Deutch, and Philip D. Zelikow, "Catastrophic Terrorism: Tackling the New Danger," *Foreign Affairs*, Vol. 77, No. 6 (November/December 1998), pp. 80–94; Robert T. Marsh, John R. Powers, Merritt E. Adams, Richard P. Case, Mary J. Culnan, Peter H. Daly, John C. Davis, Thomas J. Falvey, Brenton C. Green, William J. Harris, David A. Jones, William B. Joyce, David V. Keyes, Stevan D. Mitchell, Joseph J. Moorcones, Irwin M. Pikus, William Paul Rodgers, Jr., Susan V. Simens, Frederick M. Struble, and Nancy J. Wong, *Critical Foundations: Protecting America's Infrastructures: The Report of the President's Commission on Critical Infrastructure Protection* (Washington, D.C., October 1997); The Gilmore Commission, James S. Gilmore III, James Clapper, Jr., L. Paul Bremer, Raymond Downey, George Foresman, William Garrison, Ellen M. Gordon, James Greenleaf, William Jenaway, William Dallas Jones, Paul M. Maniscalco, Ronald S. Neubauer, Kathleen

The resulting agenda of analysis and policy development is wide. First, the motivations and root causes of catastrophic terrorism—inscrutable as they may now seem—must eventually yield at least in part to careful study.³ Second, the potential of catastrophic terrorism to transform traditional international relations should also be studied and its policy consequences propounded, as the great powers—the United States, Europe, Japan, Russia, and China—set aside some of the lesser issues that divide them and acknowledge a great common interest in protecting their homelands.⁴ This article concerns a third dimension of policy: the need to reengineer the architecture of governance—security institutions and their modes of operation—when war-scale damage results from terrorism.⁵

The Governance Issue

Post-Cold War complacency was only one reason that the United States found itself so surprised by, and so unprepared for, the onset of catastrophic terrorism and the mission of homeland security. A deeper reason is that the security institutions of the U.S. federal government are particularly ill-suited to deliver

O'Brien, M. Patricia Quinlisk, Patrick Ralston, William Reno, Kenneth Shine, and Ellen Embrey, *First Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities to Terrorism Involving Weapons of Mass Destruction I: Assessing the Threat* (Washington, D.C., December 15, 1999), <http://www.rand.org/nsrd/terrpanel/terror.pdf>; The Gilmore Commission, James S. Gilmore III, James Clapper, Jr., L. Paul Bremer, Raymond Downey, Richard A. Falkenrath, George Foresman, William Garrison, Ellen M. Gordon, James Greenleaf, William Jenaway, William Dallas Jones, Paul M. Maniscalco, John O. Marsh, Jr., Kathleen O'Brien, M. Patricia Quinlisk, Patrick Ralston, William Reno, Joseph Samuels, Jr., Kenneth Shine, Hubert Williams, and Ellen Embrey, *Second Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities to Terrorism Involving Weapons of Mass Destruction II: Toward a National Security for Combating Terrorism* (Washington, D.C., December 15, 2000), <http://www.rand.org/nsrd/terrpanel/terror2.pdf>; and The National Commission on Terrorism, Ambassador L. Paul Bremer III, Maurice Sonnenberg, Richard K. Betts, Wayne A. Downing, Jane Harman, Fred C. Iklé, Juliette N. Kayyem, John F. Lewis, Jr., Gardner Peckham, and R. James Woolsey, *Countering the Changing Threat of International Terrorism*, report of the National Commission on Terrorism (Washington, D.C., June 5, 2000), <http://www.fas.org/irp/threat/commission.html>.

3. Jessica Stern, *The Ultimate Terrorists* (Cambridge, Mass.: Harvard University Press, 1999); and Philip B. Heymann, *Terrorism and America: A Commonsense Strategy for a Democratic Society* (Cambridge, Mass.: MIT Press, 1998).

4. See Stephen M. Walt, "Beyond bin Laden: Reshaping U.S. Foreign Policy," in this issue.

5. Ashton B. Carter and William J. Perry with David Aidekman, "Countering Asymmetric Threats," in Carter and John P. White, eds., *Keeping the Edge: Managing Defense for the Future* (Cambridge, Mass.: MIT Press, 2001), pp. 119–126; and The Hart-Rudman Commission, Gary Hart, Warren B. Rudman, Anne Armstrong, Norman R. Augustine, John Dany, John R. Galvin, Leslie H. Gelb, Newt Gingrich, Lee H. Hamilton, Lionel H. Olmer, Donald B. Rice, James Schlesinger, Harry D. Train, and Andrew Young, *Road Map for National Security: Imperative for Change: The Phase III Report of the U.S. Commission on National Security/21st Century* (Washington, D.C., February 15, 2001).

homeland security. Greater awareness of the threat since September 11 alone will not rectify this problem. There is a fundamental managerial inadequacy, as basic as that of a corporation with no line manager to oversee the making of its leading product.

Pundits have been debating whether the campaign to prevent catastrophic terrorism is a “war” or not. If one sets aside semantics and asks the practical managerial question, Can U.S. preparations for war be easily adapted to preparation for catastrophic terrorism? the answer is no. Preparations for war in the military, diplomatic, and intelligence senses are the province of institutions—the Departments of Defense and State, and the intelligence community—whose focus and missions have been “over there” in the fields of Flanders, the beaches of Normandy, the jungles of Vietnam, and the desert of Kuwait. Their opponents have been foreign governments, and even against them they have not been asked to defend the U.S. homeland in recent history except through the abstraction of nuclear deterrence.

If catastrophic terrorism cannot really be treated as a war, then perhaps it should be conceived as a crime. But the U.S. law enforcement paradigm is also ill-suited to deal with catastrophic terrorism. This paradigm centers on the post facto attribution of crimes to their perpetrators and to prosecution under the law. So deeply entrenched is this model that four weeks after the September 11 attacks, the attorney general had to prod the Federal Bureau of Investigation publicly to shift its efforts from “solving the case” to preventing another disaster.⁶ Additionally, if the focus of the war model is foreign perpetrators, the focus of the law enforcement model is the American citizen. Neither model encompasses the transnational drifter that is characteristic of the al-Qaeda operative.

Early in the Bush administration, the new director of the Federal Emergency Management Agency (FEMA) asserted that catastrophic terrorism was not a war or a crime, but a disaster, and thus the province of his agency, even obtaining a presidential directive to that effect.⁷ In so doing, he reversed the previous FEMA management, which regarded catastrophic terrorism as a new mission with no funding and thus to be avoided. But even armed with a presidential directive, FEMA seemed unable to convince anyone that acts of God and acts of terror were similar enough that a managerial solution was to be found in combining them.

6. Philip Shenon and David Johnston, “F.B.I. Shifts Focus to Try to Avert Any More Attacks,” *New York Times*, October 9, 2001.

7. Vernon Loeb, “Cheney to Lead Anti-Terrorism Plan Team: New FEMA Office Will Coordinate Response Efforts of More Than 40 Agencies, Officials Say,” *Washington Post*, May 9, 2001, p. A29.

Thus the federal government lacked a managerial category for catastrophic terrorism, which is neither war, crime, nor disaster, as conventionally understood. Preparations for mass terrorism therefore proceeded haltingly in the 1990s. Some progress was made when preparedness was tied to specific events, such as the 1996 Atlanta Olympics.⁸ But elsewhere the preparations were more the result of the efforts of a few well-placed individuals—in the Departments of Defense, Justice, and Health and Human Services—who had become concerned about the problem, than of any overall managerial scheme. As the decade wore on, money did begin to flow to such programs as training state and local governments in weapons of mass destruction.⁹ But these efforts were largely the result of congressional initiative and inevitably reflected constituent interests. They did not lead to the development of a program to build a national capability for combating catastrophic terrorism.

Outside the federal bureaucracy, even less was done. State and local governments, key to both prevention and response to this new threat, generally lacked the resources and specialized knowledge to combat catastrophic terrorism. The role of the private sector—for example, in protecting critical infrastructures such as communications and power networks from disruption or in funding protection through insurance—remained undefined.

Before September 11, 2001, therefore, the U.S. government did not have a managerial approach (i.e., a framework for bringing responsibility, accountability, and resources together in sharp focus) to deliver a key public good—security in the homeland against catastrophic terrorism. This managerial deficiency was not unique to catastrophic terrorism. The post–Cold War world spawned a host of novel security missions for government: peacekeeping and post-peacekeeping civil reconstruction, counterproliferation, threat reduction, information warfare, and conflict prevention (or “preventive defense”). Although it is widely agreed that the United States needs to be able to accomplish these missions (even if debate continues over exactly when and where it should perform them), no fundamental changes have been made in the security architecture to create better institutions and capabilities for them.

8. Kennedy School of Government case authored by John Buntin, Parts A–C: “Security Preparations for the 1996 Centennial Olympic Games (Part A),” Case No. C16-00-1582.0; “Security Preparations for the 1996 Centennial Olympic Games: Seeking a Structural Fix (Part B),” Case No. C-16-00-1589.0; and “Security Preparations for the 1996 Centennial Olympic Games: The Games Begin (Part C),” Case No. C16-00-1590.0.

9. Defense against Weapons of Mass Destruction Act 1996 (Nunn-Lugar-Domenici), Public Law 104-201 (H.R. 3230), September 23, 1996, National Defense Authorization Act for Fiscal Year 1997, 104th Cong., 2d sess., <http://www.fas.org/spp/starwars/congress/1996/pl104-201-xiv.htm>.

Indeed, at least on paper the federal structure has changed little since the first burst of innovation in the aftermath of World War II and the onset of the Cold War. No comparable burst occurred in the 1990s. It is as though corporate America was managing the modern economy with the structures of the Ford Motor Company, the Bell System, and United Fruit. Company managements spend a great deal of thought and energy on organizing their functions to align executive authority with key products. The federal government disperses executive authority so thoroughly that few individuals believe they are accountable for any of the government's key security outputs. People rise to the top of the Washington heap because of their policy expertise, not their managerial expertise. Those senior executives who are managerially inclined find their tenures so short and precarious that there seems to be little reward in making changes in "the system" that will make it possible for their successor's successor to be more effective.¹⁰

Above all, the federal government in the past few decades has eschewed creating new institutions for new missions such as preparedness for catastrophic terrorism. The political climate in the United States has been hostile to "big government," and existing cabinet departments staunchly defend their heritages and authorities, many of which are enshrined in two hundred years of statute. The sense of departmental entrenchment is mirrored on Capitol Hill, where separate authorization and oversight committees protect each "stovepipe"—national security, law enforcement, disaster relief, public health, and so on—as jealously as the executive agencies themselves.

It is not surprising, therefore, that the specter of catastrophic terrorism occasions deep reflections on the nature and structure of governance in the United States. What needs to be done next cannot be understood without reference to these problems, and to past attempts to overcome them.

Four Failed Approaches

In broad outline, four approaches to managing the mission of homeland security have been proposed: the command and control approach of the Clinton administration, the lead agency approach, the establishment of a Department of Homeland Security, and the appointment of a White House coordinator or "czar." To date, the Bush administration appears to be focusing on the last, which like the other three has inherent deficiencies.

10. Ashton B. Carter, "Keeping the Edge: Managing Defense for the Future," in Carter and White, *Keeping the Edge*, pp. 1–26.

The Clinton administration defined its approach in command and control terms: Which federal agency should be in charge of dealing with catastrophic terrorism? Initially, the administration determined that the Department of Justice would “have the lead” in domestic terrorist incidents, while the Department of State would do so in incidents abroad. This approach both reinforced the false distinction between domestic and foreign terrorism and focused on acts in progress rather than on advance detection, prevention, and protection. Later, the Clinton administration promulgated two presidential directives, PDD-62 and PDD-63, which further apportioned the matter of “who’s in charge” among the existing agencies according to their traditional functions.¹¹ Thus, for example, PDD-63 assigned protection of the financial system to the Treasury Department. The fact that this department had no funds, no technology, and little authority to regulate in the field of cybersecurity did not deter the authors of PDD-63. In fact, by focusing on the question of who is in charge, the command and control approach presumed that the government possessed the capabilities to combat catastrophic terrorism; all that was required was to marshal them effectively under a clear command system. The result was the creation of a host of unfunded mandates, responsibilities assigned with no plan for providing the means to fulfill them. The administration made no provision to build new capability, which was—and remains—the crux of the matter.

A second approach considered was to designate a single lead agency as having the homeland defense mission. In this approach, the proposed lead was usually the Department of Defense. DoD was presumed to have already much relevant technology, an ample budget, and a reputation for carrying out its mission more effectively than most other government agencies.¹² But this approach failed because too much of the relevant capability—for example, for surveillance of potential terrorists on U.S. territory—fell beyond DoD’s traditional purview. The Pentagon shared the disinclination to arrogate such sweeping new authorities to itself and proclaimed itself willing to take a strong, but follower, role if another agency would lead the effort.

11. Address by President Bill Clinton at the U.S. Naval Academy, May 22, 1998; White House fact sheet, Combating Terrorism, PDD/NSC-62, Protection against Unconventional Threats to the Homeland and Americans Overseas, May 22, 1998, <http://www.fas.org/irp/offdocs/pdd-62.htm>; and White House fact sheet, PDD/NSC-63, Critical Infrastructure Protection, May 22, 1998, <http://www.fas.org/irp/offdocs/pdd/pdd-63.htm>.

12. See Joseph S. Nye, Jr., Philip D. Zelikow, and David S. King, eds., *Why People Don't Trust Government* (Cambridge, Mass.: Harvard University Press, 1996), p. 9 and references therein.

A third approach called for the creation of a Department of Homeland Security.¹³ This approach sought to escape the problem of interagency coordination by concentrating the catastrophic terrorism mission in a single agency. It recognized that none of the existing cabinet departments was a natural lead agency, and that their ingrained cultures would not easily incline them to adopt the new mission. The fallacy in this approach is that interagency coordination could be thus avoided. Suppose, for example, that the Department of Homeland Security sought to develop a more rapid means of determining whether someone was exposed to anthrax. It would soon discover that this effort was redundant with DoD's efforts to develop the same detector technology for battlefield exposure in accordance with its traditional mission. The problem of interagency coordination would not have been eliminated, but only complicated by the introduction of a new agency. Aggregating functions such as customs, immigration, border patrol, and coast guard into a new agency might be efficient, but it can hardly be said that such an entity should have the lead in homeland defense, or that its creation eliminates the inherently interagency nature of catastrophic terrorism.

A fourth approach to organizing the federal government for catastrophic terrorism is to appoint a White House coordinator or "czar." President Bush named Pennsylvania Governor Tom Ridge to such a post within a month of September 11. This approach is the least problematic, because it recognizes that the essence of the solution is the coordination of a wide range of government functions behind a new priority mission. White House czars, however, have usually been ineffective. With no resources or agencies of their own, they are easily reduced to cajoling cabinet departments into doing what the czar prescribes. The czar's instructions inevitably compete with other needs and tasks of the department, and the final outcome of the competition is determined by the cabinet secretary (invoking legal authorities, usually of long standing) and the relevant committees of Congress, not the czar. After the czar is thus overridden a few times, lower-level bureaucrats conclude that the czar's directives can be ignored. As the Washington saying about czars goes, "The barons ignore them, and eventually the peasants kill them."

The Crux of the Managerial Challenge

A solution to the managerial challenge of catastrophic terrorism should have two features that the approaches outlined above lack. First, it should acknowl-

13. Hart-Rudman Commission, *Road Map for National Security*.

edge the inherent and ineluctable interagency nature of the problem and abandon any idea of creating a single lead agency.¹⁴ Second, the approach should begin the long process of providing the United States with a stock of essential capabilities—tactics, technology, and institutions—that the federal departments, state and local governments, and private sector currently lack. Interagency coordination implies a White House focus. But this focus should not be a “czar” who tries to assume or direct the daily functions of all the agencies involved but an “architect” who designs the capabilities that these agencies need to address the problem. This approach gives the architect budgetary authority (the key to his influence) and applies that influence where it is needed most: to creating needed capabilities rather than stirring up empty command and control disputes over who is in charge of capabilities that are woefully inadequate or do not exist at all. In short, the important function of the White House architect is *program* coordination, not policy coordination or command and control. The program in question is a multiyear, multiagency effort to develop tactics, technology, and where required new institutions for the ongoing struggle against catastrophic terrorism.

Perhaps the most apt analogy for the job required of the White House is provided not by any war that the United States has fought, but rather by the Cold War. In 1949 Josef Stalin’s Soviet Union exploded an atomic bomb over the steppes of Kazakhstan. Although no U.S. citizens died in that distant blast, Americans were suddenly gripped by the prospect of warlike damage being visited upon their homeland by a shadowy enemy with global tentacles. George Kennan warned of a long twilight struggle that would test U.S. patience and resolve. The nation mobilized over time a response that was multifaceted, multiagency, and inventive. Nuclear bombers, missiles, and submarines were built for deterrence and retaliation. Spy satellites were launched for warning. Air defenses were deployed around the nation’s periphery, and missile defenses were attempted, to raise the price of attack. Civil defense programs sought to minimize casualties if the worst happened. Special relocation sites and procedures were instituted to ensure continuity of constitutional government if Washington was destroyed. NATO and other alliances were formed to get more friends on the U.S. side, and the Marshall Plan sought to ensure that economic desperation did not become an ally of Stalin. U.S. lead-

14. This does not rule out the possibility of creating an agency that combines the functions of such border-related agencies as the Coast Guard, Border Patrol, Immigration and Naturalization Service, and Customs. Accomplishing this bureaucratic feat, however useful, would require the full-time attention of a senior manager with presidential and congressional support. If Governor Ridge were to assume this task, he would have no time for anything else.

ers further recognized that this new reality was so dangerous that they needed a capacity to analyze, reflect, and learn, not merely react. They founded such think tanks as the RAND Corporation to devise innovative methods for coping with the era's new danger. In time, ideas such as the theory of deterrence and the theory of arms control were elaborated that were not obvious in 1949 but that helped navigate the world through fifty years of Cold War. With difficulty and many mistakes, the nation also learned to deal with fear of a threat at home without hunting "reds" in the State Department and Hollywood. The Cold War effort was massive, extended throughout most of the federal government, and was coordinated by the White House.

Designing a similar long-range program to counter catastrophic terrorism is the task of the Bush White House in the aftermath of September 11, 2001. The National Security Council (NSC) cannot do the job for two reasons. First, it does not normally convene the full range of departments, especially Justice and Health and Human Services, required for this effort. The NSC has largely focused on foreign problems. More fundamental, since Dwight Eisenhower's day the NSC has slowly lost the capacity for program coordination and become a policy coordination body only.¹⁵ That is, it brings the national security agencies together to decide upon a common policy but does not oversee or influence their internal capabilities or budgets. Indeed the NSC's staff is renowned for its diplomatic and policy expertise, but few have experience managing programs or agencies.

President Bush was therefore correct not to give the homeland security job to the NSC, but instead to found the Office of Homeland Security with a broader membership, chaired by Governor Ridge. It is up to Governor Ridge to avoid the fate of White House czars who try to "run things" from the White House. Instead of taking a command and control approach, Ridge should adopt the architect's programmatic approach, designing a multiyear, multiagency plan that will materially increase the capabilities of the existing departments and agencies so that they can play their part in the campaign against catastrophic terrorism. Such an approach would have the additional salutary effect of overriding the tendency, prevalent as the fiscal year 2002 budget was finalized in the aftermath of September 11, for individual agencies and their oversight committees to craft their own response to the counterterror challenge. In many cases, these responses amounted to little more than long-standing budgetary requests to

15. John Deutch, Arnold Kanter, and Brent Scowcroft with Chris Hornbarger, "Strengthening the National Security Interagency Process," in Carter and White, *Keeping the Edge*, pp. 265–284.

which the label “counterterrorism” was conveniently applied. Elsewhere, multiple agencies vied to make redundant subscale investments where a single large investment by only one of them is needed.

The homeland security program might be organized functionally according to a time line extending from before a hypothetical incident of catastrophic terrorism to its aftermath. In the first phase, the United States needs better capabilities for *detection* of catastrophic terrorism. This involves surveillance of persons and motives—a delicate matter—but also surveillance of potential means of destruction such as crop dusters, germ cultures, and pilot instruction. Surveillance of means raises far fewer civil liberties issues than does surveillance of persons, and it might be much more effective. A group that evades surveillance becomes subject to *prevention* by efforts to keep destructive means out of their hands. The Nunn-Lugar program to safeguard Russian nuclear weapons and fissile materials is an example of a prevention program. The next stage is *protection*, making borders, buildings, airplanes, and critical infrastructures more difficult to breach, disrupt, or destroy through technical design and procedures. Protection might also mean making people more resilient to disease through vaccination and other public health measures. *Interdiction* or “crisis management” seeks to disrupt and destroy potential perpetrators of catastrophic terrorism and their base of support before they can mount an attack, as in the current campaign in Afghanistan. *Containment* or “consequence management” means limiting the level of damage and the number of casualties by organizing emergency response, public health measures, and restoration of critical functions in the aftermath of a terrorist attack. *Attribution* refers to the capability to find the perpetrators of an act (e.g., by typing an anthrax culture or performing radiochemical analysis of nuclear bomb debris) and choosing retaliation, prosecution, or other response. Finally, as with the RAND Corporation in the Cold War, the nation will need a capacity for *analysis and invention*: studying terrorist tactics and devising countermeasures, understanding motivations and modes of deterrence, drawing lessons from past attacks, creating new technologies, and developing a systematic plan.

Schematically, the result of such an effort by the Office of Homeland Security would resemble a simple matrix, in which functions are arrayed in columns and the agencies involved in carrying them out in rows (see Figure 1). In each box would appear the agency’s responsibility, if any, for possessing capability in that function, with a plan to develop that capability over a period of years. The president would approve such a matrix for each fiscal year extending five years into the future, and would send it to the Congress with his annual bud-

Figure 1. Dimensions of a Homeland Security Program: The Architect's Program Plan.

| | Detection | Prevention | Protection | Interdiction | Containment | Attribution | Analysis and Invention |
|--|-----------|------------|------------|--------------|-------------|-------------|---------------------------|
| Justice/FBI | | | | | | | |
| Defense | | | | | | | |
| Intelligence | | | | | | | |
| Health and Human Services | | | | | | | |
| Border (Coast Guard, Border Patrol, Customs, Immigration, etc.) | | | | | | | |
| FEMA | | | | | | | |
| Other (Energy, Transportation, Agriculture, State, etc.) | | | | | | | |
| New Federal Agencies or Nonprofit Institutions | | | | | | | |
| State and Local Government (supported by federal grants) | | | | | | | |
| Private Sector (via regulation, subsidy, and indemnification) | | | | | | | |

get submission. Although Congress would of course have the last word on the budget, experience shows that it makes only marginal adjustments where there is a strong and clear presidential program on a subject of great national importance.

Key Ingredients of the Homeland Security Program

The homeland security program will have many key components. Below are a few illustrative examples.

RED TEAM, BLUE TEAM

Most Americans were probably not shocked to learn on September 12 that the U.S. government did not have advance information about the dozen or so individuals residing in the country who plotted and took part in the airline suicide attacks of September 11. They probably were deeply disturbed to learn, however, that the government was as heedless of the tactic used as it was of the perpetrators. The airline security system inspected for guns and bombs, not knives; aircrews were trained to deal with hijackers who sought hostages or conveyance to Cuba, not kamikaze attack. In retrospect, a huge gap existed in the U.S. air safety system. Terrorists detected it before the security system did—and exploited it.

To avoid tactical surprise of this kind, the homeland security effort needs to adopt a standard mechanism of military organizations: competing red and blue teams. The red team tries to devise attack tactics, and the blue team tries to design countermeasures. When the United States developed the first stealth aircraft, for example, the air force created a red team to try to detect and shoot them down. When the red team identified a weakness in the stealth design, the blue team was charged to fix it, systematically balancing risk of detection against the cost and inconvenience of countermeasures.

A comparable red/blue team mechanism should be the central feature of the program for homeland security. To work, the mechanism must be systematic and institutionalized, not ad hoc. It must be independent of the interests—airlines, for example—that stand to be inconvenienced by its findings. It must have the money to conduct experiments, tests, and inspections, not just paper studies. It must be knowledgeable about the technologies of terrorism and protection. Above all, it must be inventive. These criteria all argue for a new institutional founding outside of, but close to, government. Models include the National Academies of Sciences, the RAND Corporation, the Mitre and

Mitretek Systems Corporations, the Institute for Defense Analyses, and other nonprofit research organizations established during the Cold War.

SCIENCE AND TECHNOLOGY

American society has many weaknesses in the battle against catastrophic terrorism. It is large and open. Its infrastructures are complex and interconnected. It values free movement, free speech, and privacy. Its commanding international position is a lightning rod for many international grievances. The United States must therefore draw on its key strengths in ensuring homeland security, among which inventiveness, deriving from its huge science and technology base, is probably most important. The U.S. military has long sought to use superior technology to offset opponents' favorable geography, superior numbers, and willingness to suffer casualties.¹⁶ The homeland security effort requires a program of contract research and technology development that should be conducted outside of government, in universities and private companies. The contracting methods should permit small and entrepreneurial commercial companies that are the drivers of new technology, and not just large government contractors, to participate in the effort. Biotechnology companies, which unlike the aerospace and information technology industries have never had strong ties to national security, should be induced to participate.¹⁷ Finally, "centers of excellence" in counterterrorism should be established. These centers should set out to develop the same depth of expertise represented by the Los Alamos, Livermore, and Sandia National Laboratories in the field of nuclear weapons design during the Cold War.

TRANSNATIONAL INTELLIGENCE

A number of studies have called attention to the problem of combining information derived from foreign intelligence collection with information derived from domestic law enforcement.¹⁸ The rules governing collection in the two categories differ for the important reason that U.S. persons enjoy protections from surveillance that do not apply to the overseas activities of the intelligence community. There is no reason, however, why information of both types col-

16. William J. Perry, "Desert Storm and Deterrence," *Foreign Affairs*, Vol. 70, No 4. (Fall 1991), pp. 64–82; and Ashton B. Carter with Marcel Lettre and Shane Smith, "Keeping the Technological Edge," in Carter and White, *Keeping the Edge*, pp. 129–163.

17. Joshua Lederberg, ed., *Biological Weapons: Limiting the Threat* (Cambridge, Mass.: MIT Press, 1999), chap. 1.

18. Gilmore Commission, *First and Second Annual Reports to the President and the Congress*; Carter, Deutch, and Zelikow, "Catastrophic Terrorism"; Hart-Rudman Commission, *Road Map for National Security*; and Heymann, *Terrorism and America*.

lected by the U.S. government in accordance with the respective rules for each cannot be combined and correlated. The barriers to doing so are largely bureaucratic. These barriers need to be surmounted in an era when individuals move easily across borders, and when groups fomenting terrorism are likely to be transnational in their membership.¹⁹

INTELLIGENCE OF MEANS

Surveillance of the *means* that terrorists employ is potentially more important than surveillance of *persons*, and raises far fewer civil liberties issues. Placing all Middle Eastern male noncitizens resident in the United States under surveillance, for example, is both objectionable and impractical. But inquiring after all those persons, of whatever nationality, who take flying lessons but are not interested in learning to take off or land, who rent crop dusters, or who seek information on the antibiotic resistance of anthrax strains or the layout of a nuclear power plant is feasible and might be extremely useful.

Likewise, it is undesirable to restrict access by citizens to the Capitol building and congressional office buildings, but there is no fundamental technical barrier to seeding these buildings with sensors that would promptly, and with a low rate of false alarms, detect the presence of anthrax on surfaces and in ventilation systems. Nuclear weapons are much harder to detect, but the streets in the vicinity of the White House could be laced with sensitive detectors that would stand a good chance of finding a nuclear weapon or radiological weapon. Although these detectors would individually have a high rate of false alarms, when networked so that their outputs are correlated in space and time, they could comprise an effective warning system. Such a system is preferable to registering truck drivers or other methods of surveilling persons in the White House vicinity.

CONTROL OF WEAPONS AND MATERIALS

Ten years into the Nunn-Lugar program to safeguard nuclear, chemical, and biological weapons and materials in the former Soviet Union, a job remains to be completed.²⁰ In addition to continuing to support and greatly expand this

19. A specific proposal for combining CIA and FBI intelligence on transnational terrorism is contained in "A False Alarm (This Time)," pp. 143–174; and Carter, Deutch, and Zelikow, "Catastrophic Terrorism."

20. See Matthew Bunn, *The Next Wave: Urgently Needed New Steps to Control Warheads and Fissile Material* (Washington, D.C., and Cambridge, Mass.: Carnegie Endowment for International Peace and Harvard Project on Managing the Atom, April 2000); and Howard Baker and Lloyd Cutler, cochairs, *A Report Card on the Department of Energy's Nonproliferation Programs with Russia* (Washington, D.C.: U.S. Department of Energy, Secretary of Energy Advisory Board, January 10, 2001).

program, the effort must be extended to Pakistan, where an arsenal of substantial size might fall prey to growing extremism.

THE COSTS OF PROTECTION

Protective measures for homeland security cover a wide spectrum of possibilities: vaccines, air defenses around the White House and nuclear power plants, electronic firewalls around information networks, to name just a few examples. The investments required could be enormous. Who will pay? Private investment could be mandated by regulation. Government could bear or subsidize the costs. Or apportionment of risk and blame could be left to the insurance marketplace and tort courtrooms. The answer will vary from case to case, but the federal government needs to devise a strategy. Crafting the right regulation and legislation, as well as putting the right subsidies in the federal budget, will be a key responsibility of the homeland security architect.

NATIONAL INFORMATION ASSURANCE INSTITUTE

A major ingredient of the protection effort must be safeguarding the information infrastructure that resides overwhelmingly in private hands. Developing protective tools and techniques, sharing information on threats between government and private network operators, and establishing the proper balance between regulation and government spending to strengthen networks will require a public-private partnership. These objectives could be accomplished through a nonprofit institution dedicated to this purpose and funded jointly by government and participating private network operators. Several such institutions have already been proposed.²¹

INTERDICTION

Soon after September 11, President Bush enunciated a principle of U.S. policy against catastrophic terrorism that, if pursued to its logical conclusion, would establish interdiction as an ongoing effort rather than an episodic response to actual attacks. In his first major public pronouncement following the September attacks, the president said, "Either you are with us, or you are with the terrorists."²² This would seem to imply the need for a continuing program to preempt attack from groups that profess an intention to carry out mass terror-

21. "A False Alarm (This Time)," pp. 164–165.

22. President George W. Bush, Address to a Joint Session of Congress and the American People, U.S. Capitol, September 20, 2001.

ism and to apply pressure, including attack, against those who actively support or harbor them. Taken literally, such a program of interdiction would have profound consequences for U.S. foreign policy, for alliances such as NATO, and for international organizations such as the United Nations.

PUBLIC HEALTH SURVEILLANCE AND RESPONSE

Containment of the damage from an incident of mass terrorism requires that the public health and agricultural systems establish capabilities that go well beyond their accustomed mission of protecting against naturally occurring dangers. The powers of the public health authorities to mandate disease surveillance and impose such remedies as quarantine are broad, a holdover from the nineteenth century. These authorities need to be updated to encompass man-made pandemics. The private health care system overall, which under the doctrine of managed care is designed to have the least possible excess capacity during normal times, will need to provide such surge capability as extra hospital beds and stockpiled medications carefully chosen and sized for possible bioterrorism.

STATE AND LOCAL FIRST RESPONSE

The Nunn-Lugar-Domenici legislation, passed in 1996, began providing state and local first responders with the equipment and training needed to enhance their vital role in consequence management.²³ Defining the ongoing federal role in supporting state and local government is a major task of the counterterrorism program.

FORENSICS FOR ATTRIBUTION

Ever since the U.S. Air Force sampled the first residue from the Soviet Union's nuclear weapons testing in the 1950s and deduced their detailed design, radiochemical analysis of bomb materials and debris has developed into a sophisticated science. A corresponding effort to type bioterror agents and their chemical preparations is required to attribute attacks to their perpetrators. At this time the FBI, DoD, and the Centers for Disease Control and Prevention all have forensic programs, but none is adequate for counterterror purposes. The

23. Falkenrath, Newman, and Thayer, *America's Achilles' Heel*; and Richard A. Falkenrath, "The Problems of Preparedness: Challenges Facing the U.S. Domestic Preparedness Program," BCSIA Discussion Paper 2000-28, ESDP Discussion Paper 2000-05 (Cambridge, Mass.: Belfer Center for Science and International Affairs and Executive Session on Domestic Preparedness, John F. Kennedy School of Government, Harvard University, December 2000).

counterterror program architect will need to decide which of these programs will be funded to provide the greatly expanded capability the nation needs.

MOBILIZATION AND SUNSET

Until the mid-twentieth century, successful prosecution of war depended on the ability to mobilize nations and armies. A similar concept is useful in the war on terrorism. In the face of reasonably credible and specific information about actual or imminent mass terrorism, extraordinary measures might be advisable that are undesirable when there are no such warnings. In an emergency, the government will assume special authorities, restrict movement and other freedoms, and impose economic disruptions as the nation hunkers down. It is important to the quality of civil society in the long run that this mobilized state be clearly distinguished in statute and procedures from “normal” times when catastrophic terrorism is an ever-present, but not specifically anticipated, contingency. Experience in the United Kingdom during its century-long struggle against Irish terrorism suggests that even in liberal democracies, powers granted to the government in the name of imminent terrorism are seldom rescinded when the threat recedes.²⁴ It is therefore important to write into any statute or regulation conferring extraordinary powers on the government a sunset clause describing the time and method of demobilization, placing the burden for extending the mobilization squarely on the government’s ability to produce credible and specific information of imminent threat.

Conclusion

Merely coordinating the existing capabilities of the United States to counter catastrophic terrorism is not adequate to protect the nation or the international order from this major new challenge, because the existing capabilities fall far short of what is needed. Nor is it practical to imagine having someone in the federal government who is truly in charge of a mission that inherently cuts across all agencies of the federal government, state and local government, and the private sector. What is required instead is a multiyear, multiagency program of invention and investment devised in the White House, embedded in the president’s budget submissions and defended by him to Congress, and

24. Laura K. Donohue, “Civil Liberties, Terrorism, and Liberal Democracy: Lessons from the United Kingdom,” BCSIA Discussion Paper 2000-05, ESDP Discussion Paper 2000-01 (Cambridge, Mass.: Belfer Center for Science and International Affairs and Executive Session on Domestic Preparedness, John F. Kennedy School of Government, Harvard University, August 2000).

supported by appropriate law and regulation. This program should cover all phases in the war against catastrophic terrorism—detection, prevention, protection, interdiction, containment, attribution, and analysis and invention. If President Bush's director of homeland security assumes the role of architect of such an effort, he will provide future presidents with the tools they will need to cope with this enduring problem.