

## Policy Lightning

ANYONE WHO PAYS CAREFUL ATTENTION TO AMERICAN public policy—in fact, policy anywhere in the world—is constantly struck by two big puzzles. First, does government work as well as it should? Jeffrey L. Pressman and Aaron Wildavsky provided a sharp answer in the clever subtitle to their 1973 classic, *Implementation: “How Great Expectations in Washington Are Dashed in Oakland; or, Why It’s Amazing That Federal Programs Work at All, This Being a Saga of the Economic Development Administration as Told by Two Sympathetic Observers Who Seek to Build Morals on a Foundation of Ruined Hopes.”*<sup>1</sup> They poked carefully around a program for urban renewal in Oakland and concluded that the odds of success of government programs were small, and that the cynical views of so many Americans were well founded. Public confidence in governmental institutions is low and shrinking. Ruined hopes too often shape the public’s expectations about whether government can deliver on their dreams.

And that leads to the second puzzle. Why, once we see government’s problems, don’t we fix them? Why do we seem doomed not only to ruin hopes but to ruin them repeatedly? When big crises spill into the news, “How did this happen?” is inevitably followed by “How can we make sure this never happens again?” All too often, however, it *does* happen again, and that only increases the public’s cynicism. Why can’t government learn better to avoid problems in the first place—and then, when problems do happen, to make sure they don’t recur? Many citizens around the world complain about their governments, but Americans seem to complain more than almost anyone else. After all, we are a nation founded in revolution and we drove the British from the country (twice) at the muzzle of muskets. When failures are compounded by repeat offenses, more public cynicism is inevitable. Sniping among

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Jamie Dimon—chairman, president, and chief executive officer of banking giant JPMorganChase—earned the reputation of one of the world’s shrewdest financial managers in steering through the financial meltdown. Despite his legendary influence and tougher bank oversight, however, a rogue trader in the bank’s London office lost more than \$6 billion in trades that went bad.

elected officials is one thing. Failure to deliver on promises is quite another. And failing to learn painful lessons is even worse.

Consider, for example, the 2012 tale of Bruno Iksil, known as the “London whale” at JPMorgan Chase’s enormous London operation. Over the course of many months, the London whale bet he could assemble super-complex financial deals designed to make money whether the economy improved or declined. Almost no one understood what he was doing, and no one, including the firm’s top management in New York, properly supervised his activities. The whale made enormous mistakes in the deals, with losses rolling to \$5 billion or more, upsetting the world’s financial markets and creating new instability just as the shaky economy was struggling to recover from the ongoing recession.

It was bad enough that it happened at all. Members of Congress skewered Jamie Dimon, the much-respected head of JPMorgan Chase, for the multibillion-dollar loss. Adriana Vasquez, a janitor in the bank’s giant Houston building, confronted Dimon to point out that the bank had made billions in profits and stood to lose billions more, but she was

paid poorly as she worked to keep the bank running. “Why do you deny the people cleaning your buildings a living wage?” she asked.<sup>2</sup> But even worse was that the problem occurred following warnings generated by the 2008 economic collapse, when speculative bets by commercial banks had led the world’s entire financial system to the point of collapse. In 2009, three years before the JPMorgan Chase mega-loss, former Federal Reserve Board chairman Paul A. Volcker had warned President Obama in a three-page letter about such activities, urging the president to take aggressive action. Obama was convinced, and the president’s staff transformed the three-page letter into a ten-page proposal. By the time the proposed regulations for the “Volcker rule” were released, they had exploded into 298 pages of extraordinarily complex text. Even the best efforts of experts to boil down the proposal produced forty-one pages of not-quite-plain-English. Volcker himself was unhappy with the result. “I don’t like it, but there it is,” he told a reporter. “I’d like a much simpler bill. I’d love to see a four-page bill” banning banks from speculating with depositors’ money. “And I’d have strong regulators. If the banks didn’t comply with the spirit of the bill, they’d go after them.”<sup>3</sup>

When the banks collapsed in 2008, experts concluded that it was too risky to have commercial banks, in which individuals trust their savings, making big speculative bets. Those bets had cost the banks untold billions and proved far too complicated for anyone to oversee properly. Volcker argued that such speculative transactions should be separated from the basic banking business, and the president agreed. But the rule got hung up in the regulatory process. Left unrestrained by government regulations and uncontrolled by superiors who struggled to divine what he was doing, the London whale cost his bank billions of dollars. In 2008, everyone had said things like that shouldn’t be allowed to happen anymore. In 2012, it happened anyway. Why do big problems happen and, even worse, why do they recur when we all conclude they should never happen again?

This is a puzzle that stretches far beyond the financial crisis. A year before Hurricane Katrina devastated New Orleans in 2005, disaster planners conducted a drill that forecast, with eerie accuracy, the implications of a major storm hitting the city. In 1993, terrorists detonated a bomb in the garage of the World Trade Center’s North Tower, killing six people and causing vast damage. Al-Qaeda returned to the building with its 2001 assault and brought both towers down, along with other buildings in the New York City complex. We get warnings but too often fail to react; we learn lessons from previous disasters but fail to prepare. Too often, we are hurt by quick-hitting thunderstorms. Unlike Benjamin Franklin, we haven’t invented good lightning rods.

## LENNON'S LESSON

This isn't just an American phenomenon. Governments everywhere increasingly face the challenge of mastering the unexpected. The Chinese government in Beijing carefully planned a high-level engagement with the United States only to find that a single dissident, warring with a provincial government out of sync with national policy, vastly complicated the strategy. European leaders met—and met—and met—to set plans for saving the Euro, only to have voters in Greece unexpectedly force a new strategy. London Olympics planners carefully scoped out every contingency to get athletes from Heathrow Airport to the Olympic Village only to have a bus driver get hopelessly lost on the very first day.

An inescapable problem for twenty-first-century leaders is the resounding message of the great twentieth-century philosopher, John Lennon, on the Beatles' *Double Fantasy* album: "Life is what happens to you while you're busy making other plans." Small problems have a way of quickly becoming big ones. No single organization can own the solution to any problem that matters. And, despite constant complaints about "big government," bold promises to cut the size of government often collide with the harsh realities of problems for which citizens—and voters—expect solutions. In fact, toward the end of the 2012 presidential campaign, Republican Mitt Romney had just that problem. In a 2011 primary debate, he said, "Every time you have an occasion to take something from the federal government and send it back to the states, that's the right direction." After Hurricane Sandy devastated parts of the East Coast, however, his campaign amended that position. States, a statement read, "are in the best position to aid affected individuals and communities." However, "this includes help from the federal government and FEMA."<sup>4</sup> It's one thing to campaign against big government. It's another to say that the government won't help people in trouble. That dilemma is emerging as one of the most fundamental puzzles, theoretically and pragmatically, for government in the twenty-first century.

Consider what happened in April 2010 when BP's Deepwater Horizon rig exploded in the Gulf of Mexico. As the magnitude of the disaster became clear, news cameras raced to the shoreline to watch the oil begin to roll in, and reporters asked what the government was going to do to solve the problem. Some analysts asked, "Will this be Obama's Katrina?" comparing the crisis to the Bush administration's bungled efforts to respond to the hurricane that swamped New Orleans. In fact, as every subsequent investigation showed, the BP spill was the product of private-sector failures. Government policy was that oil platforms shouldn't blow up, and that private industry was responsible for following carefully

prescribed steps and installing sophisticated equipment to prevent that from happening. Nevertheless, this private failure almost immediately became a public concern, private problems defined the public agenda, demanding immediate results and bringing the threat of media punishment for failure. As problems anywhere become problems everywhere, John Lennon's lesson is a defining—and inescapable—challenge in leading and governing.

Tom Temin, host of *The Federal Drive*, an afternoon show on Washington's Federal News Radio, has coined a term for this: "policy lightning"—what happens when lightning-strike events blow policy off course. No leader wants to be surprised. Every leader wants to respond to important problems clearly, quickly, and effectively. But it's impossible to escape two conclusions: that policy lightning occurs with disturbing frequency, and that big changes are afoot that make such lightning strikes more damaging and more frequent.

In part, this is because of the uncertain nature of the problems the governance system faces. Former U.S. defense secretary Donald Rumsfeld famously captured the dilemma in a 2002 press conference about the war in Iraq: "As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones."<sup>5</sup>

Bureaucracies are created to deal with *known knowns*, which shape and define standard bureaucratic routines. While much maligned, bureaucracy is in fact a wonderful invention, allowing society to build the capacity to accomplish very complex things. The key to bureaucracy is specialization: identifying the basic mission, breaking it down into its component parts, developing expertise to efficiently accomplish each of those components, and doing so repeatedly and predictably. Most of government's routine is specifically designed to avoid policy lightning by breaking down complex missions into routine tasks. Moreover, government is very good at dealing with known knowns. Despite its financial difficulties, the U.S. Postal Service delivers mail quickly and with remarkable efficiency, yet "Mail Delivered Yet Again Today" is never a headline. The Social Security Administration accurately delivers monthly payments to almost everyone almost all the time, and its representatives answer calls to its toll-free information number in just—on average—180 seconds.<sup>6</sup> The Federal Aviation Administration's air-traffic controllers safely manage 51 million takeoffs and landings every year and serve more than 730 million passengers.<sup>7</sup> Bureaucracy is

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about doing routine things well, and the overwhelming evidence is that government bureaucracy does just that.

Effectively led bureaucracies can also deal with *known unknowns*. No one knows if or where severe thunderstorms will cause lightning, but we can prepare buildings for this known unknown by installing lightning rods. As Walter Isaacson describes in his brilliant biography of Benjamin Franklin, the inventor of the lightning rod installed a device on his Philadelphia home in the 1770s.<sup>8</sup> After returning from his long stay in Paris, Franklin disassembled part of the house to find that his invention had been struck by lightning but had saved his home from being destroyed. Nimble and resilient bureaucracies, nimbly and resiliently led, can build similar capacity for anticipating and mitigating serious public problems. In the 1990s, the Federal Emergency Management Agency (FEMA) discovered that a large proportion of hurricane damage came from roofs blowing off in fierce winds. FEMA could pay after the fact for the vast expenses resulting from ruined homes and contents—or it could work with builders, homeowners, and local governments to encourage the installation of tie-down straps around roof trusses to keep the roofs from blowing off to begin with. Bureaucracies can manage known unknowns both through *mitigation*—helping society take steps to prevent problems and reduce their cost, through strategies like the truss straps—and through *response*—providing effective help if problems occur. Mitigation is often (but not always) better than response; strong bureaucracies are good at both, and at balancing the relative investment. But the point is that good bureaucracies can deal well with both known knowns and known unknowns.

The policy lightning problem is most serious with *unknown unknowns*—troubles that are not, and perhaps cannot be, anticipated. The BP oil spill and the Euro crisis fit into this category, as do many other problematic twenty-first century events. Now, it's important to be careful with this category; it's easy to make it a catch-all explanation whenever government fails to solve big problems. It's tempting to automatically label all such calamities “policy lightning,” the product of “unknown unknowns”; after all, if they had been anticipated they surely would have been prevented. Moreover, the problem of unknown unknowns certainly isn't a twenty-first century issue. For the earliest humans, life beyond the entrance to the cave was an enormous and frightening mystery. The Book of Exodus is a tale of the Israelites' journey into the unknown. Whole movie genres, from Westerns narrating settlers' unsteady journey into wild new territory to science fiction films forecasting an unpredictable future, are about epic battles with uncertainty. From the cave to Exodus to Westerns to science fiction, there are grave

dangers, enormous risks, frightening turns—unknown unknowns that challenge every step. For the leaders of bureaucracies—from the chiefs of early human tribes to the heads of the tribes of Israel, the leaders of wagon trains, and the captains of space ships—the search for effective leadership of complex organizations becomes an effort to advance the frontiers of bureaucracy to embrace and solve new problems.

## LIGHTNING STRIKES

Six months after Hurricane Katrina ravaged the Gulf Coast on August 29, 2005, I stood atop the temporary levee along the 17th Street Canal in New Orleans. It was a truly remarkable sight, on both sides. Where the water had burst through and flooded this once-picturesque neighborhood, the Army Corps of Engineers was busy driving steel pilings deep into the banks to provide a temporary patch. Behind the pilings, the corps had filled in the breach with soil. Nearby were unforgettable reminders of the flood. Katrina's fierce storm surge had ruptured the canal's levees along a two-block-long path. Shreds of the enormous sandbags that had been dropped by helicopters to plug the hole lay near the temporary repairs, as did piles of branches and other debris.

With my back to the canal, I saw unimaginable devastation. Directly in front of the breach, where charming town houses once stood, nothing remained. The water had obliterated everything. Half a block away was a house on which the owners had clearly lavished a great deal of care. The beautiful molding in the dining room was easy to see—the front wall was missing. Next door, patterns of green mold blossomed on walls that had soaked for weeks in storm water. Block upon block, the scene was the same, until I reached a large, open boulevard a hundred yards wide. Not long before, the area had held debris—trees, branches, shrubs, and parts of homes—piled five stories high. Now it lay vacant. But there was also profound irony, for directly across the canal everything was normal. The storm surge had breached only one wall of the canal.

Far more eerie was the drive through the city's famous Lower Ninth Ward, home to jazz legend Fats Domino and an important part of the city's historical culture. Another levee had failed there, and the scene was even more horrifying. Along the acres and acres of what once had been a lively neighborhood, there were only a few abandoned cars. Around what had once been homes, I saw nothing larger than two cinder blocks among tiny shreds of personal lives: the burner plate of a gas stove, the mangled remains of a bicycle, a few feet of fence flattened by the water's force. The neighborhood was simply gone.

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A mile away from the breach, the debris came in larger pieces. A whole house was intact upon its concrete foundation, but the water had floated the house from its lot, foundation and all, and deposited it in the middle of the street. Another house had been pushed into the one next door. One house would be mostly intact; the next would be rubble. All the homes bore a high-water mark at the middle of the second floor, testifying to the floodwater the storm had left behind for three weeks. None of the homes had windows, and all of them had spray-painted marks left by the searchers who had scoured the neighborhood for the dead. Fats Domino had survived, despite early reports that he had died in the storm, but his house and his club next door lay ruined, as did much of the city he loved. When many New Orleans residents had returned, all they had discovered of their homes was the concrete slabs on which they had been built.

The news media had saturated their coverage of the storm with images of thousands of refugees at the New Orleans Superdome and of intrepid Coast Guard helicopter pilots plucking stranded victims from their rooftops, thus painting a human face on the tragedy. But what the news cameras never succeeded in capturing was the sheer size and scope of the damage and suffering. Even six months after the hurricane struck, it was possible to drive for more than half an hour and see only the first stirrings of a return to normal life: a car dealership just reopening here, a home supply superstore there. Most of the scene remained one of devastation: motels surrounded by chain-link fences, empty strip malls with the shelving from the stores piled in the middle of the parking lot, vacant garden apartment buildings with all their windows on the first two floors shattered. For mile upon mile, the scene was a grim reminder that the news cameras had caught only a small part of the story.

Reports from neighboring Mississippi and rural parts of the Louisiana Delta made clear that even these sprawling scenes of devastation were a tiny snapshot of the far larger disaster. One Native American chief had proudly negotiated with Wal-Mart to obtain plastic containers for refugees from her tribe to use in collecting their belongings. But when tribe members returned to their community after the waters receded, they emerged with empty containers, for there was simply nothing left. Fishermen scrambled to get back to work, but they couldn't bring their fish ashore because there were no working ice plants to keep the fish fresh. When their nets broke, there were no repair shops for hundreds of miles.

Just a few months later, I returned to the scene of the attacks on the World Trade Center in New York. It had been nearly five years since



the terrible day in 2001 when terrorists hijacked jumbo jets and crashed them into the towers. The site was a construction project—seventy feet deep and stretching a fifth of a mile. As with Katrina’s assault on the Gulf Coast, the one thing that the news cameras had not been able to capture was the sheer scale of the disaster. The towers had reached 110 stories into the sky and, when they collapsed, they left debris piled high across block after block of lower Manhattan.

The visit brought back memories of one of the truly awful summer jobs I had held while in college. I had helped repair frosted glass panels for recessed fluorescent light fixtures in office buildings. You have undoubtedly seen them—light tubes sit within a metal case recessed into the ceiling, and a textured glass panel flips up and locks into place to diffuse the light and camouflage the fixture. A different company had won a contract to build the fixtures we worked on, but when the thousands of glass panels arrived at the construction site, workers discovered that they were a fraction of an inch too wide for the fixtures. The glass could not be machined down, so the company contracted with a small business in my hometown to use air-powered screwdrivers to disassemble the frames, remove the old glass, insert a new piece of the correct size, and put the panels back together. The new panels were then shipped back to the construction site, and the thousands of defective glass panes were tossed into a dumpster and taken to the landfill.

Years later, when I started my academic career at Columbia University, I could admire my handiwork from my office window more than ten miles away. The panels, it turned out, had been made for several floors of the World Trade Center, and the lighted floors of the two 110-story towers were among the city’s most recognizable landmarks. As I prepared to teach my classes, I always got a chuckle when I looked south toward the buildings, knowing that my summer work had produced a small—a very, very small—piece of those buildings.

I visited the site with my wife just a few months after the buildings collapsed. Plywood walls erected during the search and recovery process had been turned into memorials to the 343 firefighters and 60 police officers who had died in the attacks. The street was filled with other people who had quietly come, as we had, to pay their respects to the more than 2,800 people who had lost their lives there that September morning. Just the day before that visit, in fact, workers had discovered the remains of three more victims.

The site was emotionally moving. Poignant personal notes from family members, posted nearby on the makeshift walls around historic St. Paul’s Chapel—which had served as a headquarters for rescue workers—bore testimony of the rich lives of those who had died. Dust

was everywhere. In fact, the smell of wet dust (the removal teams had been spraying the debris with water for months to keep the dust from blowing around) was our first introduction to the site, even from blocks away. It was impossible to escape the sense that the dust was the pulverized remains of the buildings and everything within them, including, in a small and ridiculously insignificant way, the fluorescent light panels on which I had worked as the towers were being constructed.

The two Boeing 767 jets that flew into the World Trade Center towers caused the biggest loss of life, but they were only part of the terrorist assault that morning. In an attack that was both exquisitely designed and horribly delivered, a third hijacked plane, American Airlines Flight 77, flew into the Pentagon at such enormous speed that, according to engineering experts, the plane penetrated 310 feet of the building in less than a second.<sup>9</sup> The west side of the building collapsed, and the 64 people aboard the plane and 125 inside the Pentagon died. Among those who lost their lives were Georgetown University economist Leslie Whittington, her husband, and her two young daughters, who were on their way to Australia for a year-long sabbatical. Also killed was Lieutenant General Timothy Maude, the thirty-four-year army veteran who had developed the highly successful “Army of One” recruiting campaign.

On a fourth hijacked plane, which al-Qaeda terrorist leaders later claimed was bound for the Capitol in Washington, passengers learned through their cell phones that other planes had been hijacked and crashed in New York and Washington. Todd Beamer, a father of two from Cranbury, New Jersey, had called GTE Airfone operator Lisa Jefferson to tell her about the hijacking. “We’re going to do something,” Beamer told Jefferson, and he added simply, “I know I’m not going to get out of this.” He asked the operator to pass along a message to his wife, Lisa: “Tell her I love her and the boys.” Beamer asked Jefferson to recite the Lord’s Prayer with him. When he had finished, Beamer asked a team of fellow passengers, “Are you guys ready?” He then said, “Let’s roll.” Listening intently, Jefferson heard screams, a struggle, and then she lost the connection.<sup>10</sup> Authorities later determined that Beamer and his colleagues had rushed the cockpit and struggled with the hijackers to prevent another catastrophic attack. The plane fell from the sky into a field in Shanksville, Pennsylvania, hundreds of miles short of its intended target, killing all forty-four passengers and crew members.

On the morning of September 12, 2001, editorial writers for the *New York Times* surveyed the crushing damage of the previous day’s terrorist attacks. “It was, in fact, one of those moments in which history splits, and we define the world as ‘before’ and ‘after;” the editors wrote sadly. “We look back at sunrise yesterday through pillars of smoke and dust,

down streets snowed under with the atomized debris of the skyline, and we understand that everything has changed.”<sup>11</sup> Chris Patten, foreign affairs commissioner for the European Union, added, “This is one of the few days in life that one can actually say will change everything.”<sup>12</sup>

There had been no lack of warning of such threats. In fact, in early 2001, FEMA had identified the three biggest disasters that might afflict the United States: a terrorist attack in New York, a strike by a major hurricane in New Orleans, and a major earthquake in San Francisco. One of these disasters hit within months of FEMA’s predictions. A second hit within four years. But despite the clear warnings and the recurring drills to prepare the nation, both events caught the system flatfooted. Before September 11, the nation’s intelligence services had collected numerous threads that, if woven together, might have helped prevent the attacks. Everyone knew an assault by a major hurricane on New Orleans, most of which is below sea level and all of which is protected by an extended string of vulnerable levees, could leave large parts of the city under water. Nevertheless, when the long-feared storm arrived, local, state, and federal officials were woefully unprepared. Nowhere were the problems worse than at FEMA, which had itself issued the warning.

## THE RISE OF “HOMELAND SECURITY”

In the weeks that followed the September 11 terrorist attacks, President George W. Bush and his advisers devised a new strategy for “homeland security.” The president appointed Pennsylvania Governor Tom Ridge to head a new White House Office of Homeland Security, and at Ridge’s swearing-in ceremony Bush outlined his strategy. “We will take strong precautions aimed at preventing terrorist attacks and prepare to respond effectively if they might come again,” he said. “We will defend our country; and while we do so, we will not sacrifice the freedoms that make our land unique.”<sup>13</sup>

The “homeland security” label rankled some Americans. To some, it sounded Hitler-esque, an echo of the German dictator’s plan to purify his homeland. Others thought it had an Orwellian “big brother” feel to it. In fact, according to *New York Times* columnist and wordsmith William Safire, *homeland* had begun to creep into the political lexicon during the early 1900s as Zionists worked to establish a Jewish homeland in Palestine. Fascists in Austria and Germany later picked up the term to refer to “homeland defense.” Conservatives began using the word well before September 11 to refer to defense of the United States from a new variety of modern threats. At the same time, defense analysts began exploring the national implications of a spread of terrorism. It

was not surprising, therefore, that when the Bush administration needed to respond quickly to September 11, it used concepts—and a name—already in play. There were alternatives, such as the less ponderous “domestic security,” but that risked confusion about threats from abroad that might affect the nation’s communities. So Washington policymakers reached for a term already in common (if narrow) use and built their new policy on it.

Bush faced several dilemmas. He pledged to prevent attacks, but he also promised to be ready to respond if they occurred. He pledged to defend the country but promised to defend liberty. He struggled with the central, inescapable trade-off at the core of “homeland security”: achieving security against new, uncertain threats from terrorism inevitably meant giving up other things, including some freedoms. Just how much protection did the nation want? And how much sacrifice of civil rights and individual liberties would citizens tolerate in exchange for that protection?

That led administration officials to the central dilemma. They sought *prevention*: to do everything possible to ensure that those who might launch such attacks were stopped before they could try. But they also needed to strengthen *response*: to do everything possible, should an attack occur, to minimize injuries, loss of life, and damage to property. Administration officials knew that although any attack was unacceptable, total protection was impossible. The terrorists had proved that they were cunning strategists who worked hard to identify and exploit points of vulnerability. Officials were also aware that they needed to strengthen the system’s response. But that would matter only if the prevention strategy failed, and they didn’t want to talk publicly about that possibility. Officials thus needed to maximize their ability to respond while doing everything possible to prevent attacks in the first place.

For years, defense analysts had been warning that the nation needed a stronger strategy to prevent attacks. Just three months before the attacks, in fact, a coalition of defense think tanks had staged an exercise at Andrews Air Force Base, just outside Washington, to explore the potential effects of a smallpox attack on the United States. Called “Dark Winter,” the exercise put experienced government officials into a hypothetical situation and tracked their decisions (former senator Sam Nunn, D-Ga., for example, played the president).<sup>14</sup> The exercise suggested that as many as a million Americans might die from such an attack. Analysts concluded that the nation’s leaders were ill prepared for bioterrorism and that the health system did not have the capacity to deal with mass casualties.<sup>15</sup> As Nunn ominously told a congressional committee on July 23, 2001, following the “Dark Winter” exercise, “You often don’t know

what you don't know until you've been tested. And it's a lucky thing for the United States that—as the emergency broadcast network used to say: 'This is just a test, this is not a real emergency.' But Mr. Chairman, our lack of preparation is a real emergency."<sup>16</sup>

Indeed, earlier events had shown the need for a better national strategy to identify threats and prevent attacks, which were growing in number and destructiveness. The very same group of terrorists who launched the September 11 attacks had bombed the World Trade Center in 1993. Six people died in that attack and more than a thousand were injured. In Oklahoma City in 1995, an American, Timothy McVeigh, blew up the Murrah Federal Building and killed 168 people. In 2003 police arrested Eric Rudolph for the bombing of Atlanta's Centennial Park during the 1996 Summer Olympics. The bombing of the Yale Law School in May 2003, just days before graduation, hurt no one but made those attending the ceremonies very jittery.

Other nations have struggled for years with terrorist activity, from attacks in Israel during the Palestinian uprising to explosions staged by Northern Ireland partisans in London. A Japanese religious cult obsessed with a coming apocalypse released sarin, a nerve gas, into the Tokyo subway system in 1995. The attack miraculously killed only twelve, but it injured more than five thousand. In 1996 al-Qaeda killed nineteen American servicemen in an attack on the Khobar Towers military barracks in Saudi Arabia. In 1998 the group simultaneously bombed the American embassies in Nairobi and Dar es Salaam. More than three hundred persons, including twelve Americans, died in those two attacks.

Disaffected groups have increasingly relied on terrorism, especially since the end of the Cold War in the 1980s. Facing big and powerful military forces, these groups have realized that small, focused, continual attacks—especially attacks on civilians—can undermine governments and strengthen their own position. An unrelenting terror campaign drove Russian troops out of Afghanistan, and groups in the Middle East began plotting more such attacks against American might. Handfuls of terrorists could not directly take on the American military, so they plotted what military analysts call "asymmetric attacks," bypassing the main military forces to inflict terror and pain, gain publicity, and deliver a message that no head-on military attack ever could.<sup>17</sup>

America's long-stated policy against negotiating with terrorists helped shape the terrorists' strategy. American officials had determined never to be forced into bargaining with people who used violence to advance their goals. But if terrorists could not seize hostages and negotiate political deals, they found that they could use violence to promote their ideas and try to frighten nations that pursued policies they opposed.

Resorting to violence has also made terrorists more secretive, impeding the efforts of government intelligence services to identify threats and uproot terrorist cells.

Meanwhile, innovative technologies have opened new avenues to terrorists. Weapons have become smaller and more portable. The miniature nuclear bomb that fits into a suitcase is now the antiquated device of spy novels. Although such a weapon is not feasible, it has become possible to put a nuclear bomb in a container small enough to be easily transported in a van. Microscopic bits of anthrax could kill hundreds and radioactive materials could injure thousands, and other biological and radiological weapons are also highly portable. After September 11, investigators discovered that Osama bin Laden and his al-Qaeda terrorist cells communicated through highly sophisticated cellular phone networks and e-mail, even as bin Laden was hiding in primitive caves.

Small numbers of terrorists, armed with sophisticated weapons and even more sophisticated strategies, can stage bold attacks. America's massive military forces, which can defeat any army in the world, cannot guarantee protection against such tactics. The nation's homeland defense can be excellent, but 99.9-percent protection is not enough when terrorists can slip through tiny cracks in the system and inflict enormous damage. It took just nineteen terrorists, armed with weapons that passed through metal detectors in at least four different airports, to stage the September 11 attacks.

In the years after the September 11 attacks, the Bush administration focused squarely on terrorist risks. It would have been unthinkable to do otherwise. The attacks had killed more Americans on American soil than any belligerent act since Pearl Harbor, and al-Qaeda made clear that the assault was only the first in what it pledged would be a long campaign. In signaling their resolve to prevent a slide back into business as usual, Bush and members of Congress agreed to create a new cabinet department to bring together the related elements of the homeland security mission. Twenty-two agencies, from the Secret Service to the Immigration and Naturalization Service, joined in a new campaign to protect and defend the homeland.

One of the agencies incorporated into the Department of Homeland Security was FEMA, which had long been responsible for helping the nation recover from major disasters, natural or manmade. FEMA was the organizational child of the civil defense organization created to help the nation rebuild after a possible nuclear attack, and its homeland security roots run deep. After Hurricane Andrew forged a devastating path through southern Florida in 1992, however, the Clinton administration worked hard to significantly strengthen its capacity to help communities

recover from natural disasters. Andrew, a Category 5 storm, had wiped whole neighborhoods off the map, and the scale of the devastation was almost unimaginable. FEMA's response, however, was poor and sluggish, and federal officials vowed that they would learn Andrew's lesson and ensure that no community ever had to suffer in that way again.

But Katrina's swath through the Gulf Coast belied that promise. Yet again, Americans were in great peril and their government's response proved slow and ineffective. After forming in the Caribbean, Katrina had threaded its way between Florida and Cuba before blowing suddenly into a Category 5 storm. It weakened slightly before slamming into Louisiana and Mississippi but remained the third strongest hurricane ever to hit the United States, with winds of 125 miles per hour and monstrous storm surges. Damage was extensive from Texas to Florida, but New Orleans suffered the greatest damage. Levees designed to protect the city from an even larger storm failed as the water poured in.

It was the worst-case fear of longtime emergency planners—precisely the storm FEMA planners had worried about in 2001 and for which they had conducted major exercises just the year before. New Orleans is shaped like a bowl, with levees at the edges to hold back the Mississippi River and Lake Pontchartrain. The storm hit the city with a glancing blow; it was the back side of the storm that inflicted most of the damage. The retreating storm's winds pushed a wall of water across Pontchartrain and down the city's drainage canals. The levees, which had been designed to withstand a storm of the size Katrina had attained when it finally hit New Orleans, failed at several key points. Water poured through the gaps and quickly made most of the city impassable. Within hours, about 80 percent of the city was submerged, in some places to a depth of twenty feet.

Many residents who did not (or could not) evacuate in time were stranded inside their homes. As the water rose, they moved higher and higher until, trapped in their attics, they chopped through their roofs and frantically waved to Coast Guard helicopters flying rescue duty overhead. An estimated 25,000 refugees gathered at the Superdome, the city's sports arena, where they quickly ran out of the meager emergency supplies of food and water. The Superdome became rancid from a lack of air conditioning and toilet facilities. Another 20,000 evacuees gathered a few blocks away at the New Orleans Convention Center, where the facilities soon became just as bad.

In the steamy heat, elderly evacuees died without their medicine. Civil order broke down. Many of the city's police officers were victims themselves, and some simply walked off the job. Those working the streets found themselves without radio communications or gasoline for



Failure of the levee along the London Avenue Canal, along with breaches in the 17th Street and Industrial canals, led to widespread flooding in New Orleans. The back side of Hurricane Katrina's storm surge pushed water down the narrow canals. When the walls collapsed, water quickly covered 80 percent of the city.

their police cruisers. Ammunition ran short as rioters and looters ran wild. New Orleans Mayor Ray Nagin found himself isolated from most other city officials and resorted to communicating with the outside world through interviews with CNN. "I need everything," he pleaded. When help did not arrive quickly, he condemned federal officials. "They're thinking small, man. And this is a major, major, major deal. And I can't emphasize it enough, man. This is crazy." Federal officials told him that help was on the way. Nagin countered, "They're not here." Frustrated, he added, "Now get off your asses and do something, and let's fix the biggest goddamn crisis in the history of this country."<sup>18</sup> Louisiana Governor Kathleen Blanco phoned President Bush and asked for "all federal fire-power." She continued, "I mean everything. Just send it. Give me planes, give me boats . . ."<sup>19</sup>

Their pleas for help seemed to go nowhere. News broadcasts from the scene showed hungry, thirsty, desperate, often angry people swarming the makeshift evacuation centers. Others waved the shirts off their backs to helicopters. Airboats poked along the flooded streets while the police and National Guard struggled to keep the city from drifting



into anarchy. It was all broadcast live into the nation's living rooms. The images provided searing evidence of the tragedy, and they led to tough questions from many citizens. If CNN could get its cameras to the scene, why could the government not deliver food and water? If network broadcasters could use satellites to beam out their video, why were government officials having such a hard time talking with each other?

As the waters receded in New Orleans and across the Gulf Coast, the search for victims began. It quickly turned grim. Rescuers found thirty-four residents of St. Rita's Nursing Home who had drowned in the storm. Their searches found other victims, some floating in the tepid water and others trapped in their homes. In all, more than 1,800 people died in the storm. Property damage exceeded \$75 billion, making Katrina one of the most costly natural disasters in the nation's history. But the consequences paled in comparison with the near meltdown in the nation's—indeed, the world's—financial system just three years later.

## FINANCIAL COLLAPSE

On January 3, 2009, Michael Lewis and David Einhorn wrote a devastating column in the *New York Times*. Americans, they said, were entering the new year as “financial lunatics.” For a long time, “even our harshest critics have been inclined to believe that we knew what we were doing.” But then came the gargantuan financial collapse of late 2008. In just a few short weeks, one of the world's oldest and most respected investment banking firms, Lehman Brothers, declared bankruptcy. Since 1850, the firm, founded by two Bavarian immigrants, Henry and Emanuel Lehman, had helped arrange the financing for the growth of many of America's best-known companies, such as Macy's and BFGoodrich. When it came tumbling down, along with hundreds of community banks, the stock market plummeted, falling more than 22 percent at the beginning of October 2008. The nation's two largest funders of home mortgages, Freddie Mac and Fannie Mae, were taken over by the federal government. Housing prices continued the steep decline that had begun a year before, and many homeowners found they were “underwater,” owing mortgages higher than their homes were worth. The crumbling of the home mortgage market, the stock market collapse, and deeper problems in the financial industry led many banks to close or to be acquired by others. Credit froze up, with few lenders being willing to lend money to anyone for anything until the markets stabilized. It was, Lewis and Einhorn said, “the end of the financial world as we knew it.”<sup>20</sup>



Although big financial problems had been brewing for months, the bankruptcy of the giant investment banking firm Lehman Brothers catapulted the problems into a full-scale crisis, which soon spread across the globe.

The crisis staggered the financial system, producing a precipitous decline in home prices and driving unemployment to 10 percent (much higher in some especially hard-hit parts of the country) by October 2009. The Obama administration counterattacked with a \$787-billion economic stimulus program, even though that drove the federal debt to astonishing heights. Recovery proved very slow and excruciatingly painful, and the battle over recovery of American jobs defined the central contest in the 2012 campaign between Obama and Republican challenger Mitt Romney.

At the bottom of this crisis, bigger than any the U.S. economy had suffered since the Great Depression of the 1930s, were simple questions: How did we allow this to happen? Didn't anyone see this coming? After all, private bond rating agencies like Moody's and Standard & Poor's had been paid to judge the safety of investments. The federal government had charged an alphabet soup of regulatory agencies—the Securities and Exchange Commission, the Federal Reserve, the Office of the Comptroller of the Currency, and a host of others—with overseeing the financial industry. But, in the end, neither private nor public regulators had proved up to the task. The simple questions, as it turned out, had simple answers: too many investors, from ordinary home buyers

to masters of the financial universe, were leveraging their borrowing beyond their means. And far too many financial investments were too complicated for anyone to fully understand what they were selling or buying. One symptom of the problem was that many investment banking firms were aggressively recruiting astrophysicists.

Astrophysicists and investment banking? Astrophysics requires the ability to create complex models through advanced mathematical analysis and thus promised to be extremely helpful in designing intricate financial instruments that would make money no matter which way the markets moved. This approach serves very well to predict the behavior of stars and the motion of planets. When it was applied to the financial system by people who didn't understand the financial forces they were modeling, and when it was based on assumptions that could easily be proved wrong, the result was what one might expect: economic disaster.

Stung badly by the collapse, federal regulators sought to understand not only what had happened but also how to predict future weak spots in the system and keep rips in the financial fabric from producing a deeper collapse. In early 2012, the Federal Reserve conducted a special analysis of the nation's banking system, a "stress test" that subjected the banks to projections about their financial health under a variety of difficult economic circumstances, including a severe recession. The most severe test involved the following scenario: unemployment of 13 percent, a drop in housing prices of 21 percent, big shocks to the stock and financial markets, and economic recessions in both Asia and Europe. Compared with the high anxiety of 2008's economic crisis, the news was mostly good: fifteen of the nation's nineteen largest banks received a good grade. Even after such economic shocks, most of the banks would have adequate capital to stay in business and make good on their customers' deposits. Everyone—bankers and the stock markets—breathed a sigh of relief.

In the midst of the meltdown, the Fed and Treasury had taken historically aggressive action to shore up the banking system. In many banks, assets vaporized as complex instruments, including some modeled by the astrophysicists, lost value or simply could not be traded, since no one knew whether they were worth anything. This jeopardized the ability of the banks to stay in business. In addition, as many bankers put it, the credit markets "froze up": bankers didn't know who they could trust to repay loans, and they didn't know what collateral borrowers had put up to secure their loans. As a result, almost no one was lending anyone any money to do anything, and that increased the downward economic spiral to the point of near collapse of the international financial system.

Congress rushed through the Troubled Asset Relief Program (TARP) to put up \$700 billion that the Treasury could use to buy the “troubled assets” of banks to keep them afloat. Under the program, any dividends the banks paid had to be approved by the federal government, to avoid a situation in which the government propped up the banks and the banks used their government-funded capital to reward private shareholders. Many of the banks had recovered to the point that the federal government authorized them to begin buying back their shares and to resume paying dividends to shareholders. To determine whether it was safe to go further, the Fed conducted its stress test, and most of the banks got high grades.

The executives of JPMorgan Chase were among those who celebrated the March 2012 announcement that their firm had scored well in the stress test. This meant not only that the bank had weathered the crisis but also that it was ready for a robust relaunch of its global operations. Before the 2008 crisis had shifted into high gear, the bank had been one of the strongest in the world. In March 2008, through weekend negotiations with the Fed, JPMorgan Chase had acquired Bear Stearns at a deeply discounted price. It emerged from the collapse not only as the nation’s largest bank but with the reputation of being an exceptionally well-managed bank. Jamie Dimon, the bank’s president, chairman of the board, and chief executive officer, was widely seen as one of the very best bank officers anywhere. He championed Wall Street’s efforts to fight off even more governmental control. Following the 2008 debacle, Dimon took a straightforward approach to restoring the banking industry’s reputation. “You do the right thing every day, or try to. There will be mistakes—you correct them,” he said. That approach won him the reputation of “America’s least-hated banker,” as a *New York Times* headline put it.<sup>21</sup> Dimon and JPMorgan Chase celebrated the strong stress test scores by announcing a 20-percent increase in the bank’s dividends, saying that it would buy back \$15 billion of its stock from the federal government. Clearly they intended to lead the charge back from the financial precipice.

But just months later came the reports that the London whale had engaged in rogue trading. At first, Dimon dismissed the news as “a complete tempest in the teapot,” which his London colleagues would recognize as a twist on the British idiom “storm in a teacup.”<sup>22</sup> But Dimon had this one wrong. Initial estimates that the loss would be \$2 billion soon doubled and then tripled. JPMorgan Chase had to postpone its stock buyback, an embarrassment to the bank’s efforts to rebuild itself and lead the financial industry to success.

Even more fundamental, though, were a series of stunning questions: How did such a powerful global institution find itself entrapped in the

international financial meltdown? How, once it managed its way through the collapse and received stellar grades from the stress test, did it yet again find itself derailed by activities its top executives did not understand and had not approved? To return to our core puzzles, why don't government's policy systems work better? And why, once we see problems, can't we fix them?

## ADMINISTERING THE STRESS TEST

The stress test label, of course, comes from medicine. For the uninitiated, this is a test doctors give to check how well a person's heart works. The doctor wires the patient to a heart monitor and the patient hops onto a treadmill. The doctor starts the treadmill and gradually increases the speed and slope to see how well the heart responds—and how long the patient can last. The cardiologist is very, very careful, but he always has a faint smile as he makes his patients sweat.

The test is extremely valuable. It checks how well the heart supplies blood to the body, including to its most important muscle, the heart itself. It can also reveal any underlying problems, like abnormal rhythms, that could prove dangerous or fatal if the heart had to respond to unusual stress. This is important for people who have cardiovascular disease so that their physician can determine how best to treat the illness. And it can prove a lifesaver for people who don't yet know they have circulatory problems. Doctors have developed a remarkable array of treatments to help people with cardiovascular problems live long and happy lives. But to do so, they need to diagnose simmering problems before they rear up, because sudden heart attacks are often life threatening—and sometimes fatal.

If serious problems show up in one stress test, the cardiologist will usually recommend strong treatment for the patient—perhaps some medication, a change in diet and exercise, and sometimes a surgical procedure to diagnose and treat the trouble. If two stress tests in short succession show serious problems, the cardiologist will be very worried. These results will almost always bring quick and powerful treatment, because physicians know that these problems never get better on their own—and they often get worse. Cardiologists never tell patients they “failed” a stress test. They don't want to be judgmental. But back-to-back tests showing continuing problems will induce any cardiologist to exchange her warm bedside manner for a stern lecture on the need for more exercise and a better diet.

American government had three stress tests in seven years—the 2001 terrorist attacks, the 2005 hurricane, and the 2008 financial collapse.

Any cardiologist whose patient showed those symptoms would act aggressively and immediately. Of course, government officials did likewise. In each case officials pledged aggressive action to ensure that the problems would not recur, promising to rebuild bigger and better than ever. The nation's emergency preparedness and response system has clearly improved. Indeed, a whole new federal department and a vastly expanded field of study, both christened "homeland security," have come to center stage. Financial regulation is now unquestionably stronger. But despite these efforts, there are disturbing signs that government officials have not put into practice what the two disasters so painfully taught us. Even though the experiences of September 11 offered obvious lessons, we suffered from many of the same problems when Katrina struck. And the 2012 fiasco resulting from the London whale's activities occurred despite promises that the system had been fixed—and despite the clean bill of health the Fed's own stress test had provided.

These three stress tests are a powerful diagnostic tool, for they provide strong insights into what government does well—and what it doesn't. A careful look at how these crises have affected the system not only can assist us in determining how best to improve policy, but also can give us powerful clues into the inner workings of American government—the analytic insight that can help us see what often remains hidden in the government's daily operations.

## POLICY LIGHTNING AND PUBLIC POLICY

Citizens rely on government to manage the country's defense and foreign affairs, to help communities recover in times of need, to safeguard their banking system and protect their savings. The very nature of these issues, however, requires citizens to play central roles themselves. No matter how good a homeland security system the nation builds, it cannot be foolproof, and terrorists can find a way to exploit any vulnerability. Citizens anywhere may find themselves at risk from natural disasters, and they might have to rely on their own wits for safety. And investors who sink their money into things they don't understand and who spend beyond their means are courting big trouble.

Citizens want strong leaders who can help them understand the threats they face and what they can do about them. When problems happen, they want a government that can respond, quickly and effectively. Moreover, they have little patience for problems that recur after everyone, especially government officials, had full warning. After September 11, analysts and media pundits pointed endlessly to the "connecting-the-dots" lapse in dealing with problems that, in hindsight,

seemed to have been in full public view but for which diagnosis and prevention beforehand and effective response afterward seemed hamstrung by a lack of vision and coordination.

In the days after September 11, the news media were full of stories posing the question, “Why do they hate us?” Reporters tried to fathom why the terrorists would willingly give their lives to kill and injure Americans they had never met, and why other foreigners would dig deep into their pockets to finance the operation. Understanding that the terrorists came from “failed societies that breed anger,” as *Newsweek* put it, helped a bit.<sup>23</sup> But Americans were looking for more than just an intellectual explanation. As parents struggled to convince nervous children that they were safe, the nation’s citizens wanted—and needed—reassurance that the government was doing everything it could to prevent similar attacks in the future. President Bush’s resolute speeches fueled a bump in his public approval rating to more than 90 percent. But as memories of the September 11 attack faded, his ratings fell back. Even at the height of Bush’s popularity, however, analysts and observers on all fronts worried about whether the attacks demonstrated a fundamental failure of American government. The criticism extended to state and local governments, which found themselves financially stretched and administratively challenged in coping with new security demands. Many governors and mayors, used to responding to floods and fires, suddenly found themselves worried about terrorists—and the need to reassure citizens they were safe in their homes.

Four years later, Katrina only reinforced this debate. When the news cameras showed horrific scenes of Americans stranded without food or drink or focused on bodies floating in tepid water, the outrage was loud and inescapable. Many Americans demanded to know how the government could have so failed its citizens. Some observers countered that some of the victims had ignored the warnings to evacuate, but many New Orleans residents simply had not been able to leave. Some were old or ill. Others had no cars and little money for tickets on the last planes and buses out of town. “It’s like being in a Third World country,” one hospital manager said sadly in struggling to deal with the storm’s consequences.<sup>24</sup> Why did the government not respond better to citizens’ obvious needs? The recurring question seemed to have no satisfactory answer.

Then came the financial meltdown, as many citizens saw the value of their homes plummet and their retirement savings dissolve. Giant institutions, whose history and stability had helped provide reassurance through financial storms, evaporated overnight. A psychology of panic swept over many investors. As Hyun Song Shin, an economics

professor at Princeton, explained, “It’s like having a fire in a cinema,” because “everybody is rushing to the door. You are rushing to the door because everyone is rushing to the door. Clearly, as a collective action, it is a disaster.”<sup>25</sup> The headlines were tales of unrelenting disaster, with one financial crisis tumbling to the next, and with problems in one investment bank quickly infecting the rest of the nation’s—and then the world’s—economy. The sense of unease was palpable. The aura of anxiety was inescapable. But worst of all, according to the official government commission created to investigate the crisis, “this financial crisis was avoidable.” In fact, the report concluded, “the captains of finance and the public stewards of our financial system ignored warnings and failed to question, understand, and manage evolving risks within a system essential to the well-being of the American public. Theirs was a big miss, not a stumble. While the business cycle cannot be repealed, a crisis of this magnitude need not have occurred. To paraphrase Shakespeare, the fault lies not in the stars, but in us.”<sup>26</sup>

This, in fact, is a theme—perhaps even a frequent indictment—of American democracy. Just as Cassius pleaded with Brutus in Shakespeare’s *Julius Caesar*, we have to confront this basic question: does the human condition, coupled with the workings of the American system, make such crises inevitable? The stress tests of these crises provide important clues about what happens, why it keeps happening, and what we can do about it.