Redefinitions. The destruction of the World Trade Center and the attack on the Pentagon should force a redefinition of what we mean by weapons of mass destruction. For decades, proliferation experts have concentrated on preventing the spread of nuclear, biological, and chemical weapons. They focused on the weapons that nations had created during the Cold War, fearing that others might build them as well. In addition to the technical and financial barriers to developing these horrific weapons, generations of leaders constructed legal, political, and diplomatic barriers through the treaties and agreements of the international non-proliferation regime.

The bitter irony is that the regime worked. While there are still gaps in the treaty regime, on the whole, it made it very difficult for anyone to acquire one of these weapons. Four decades after President John F. Kennedy feared that fifteen, twenty, or twenty-five nations would soon have nuclear weapons, there are only eight nuclear-weapon states in the
world. Decades after the United States and the Soviet Union perfected and proliferated enough chemical and biological weapons to wipe out all human life on the planet, global treaties have banned both types of weapons and destroyed large parts of the Cold War arsenals. However, now the United States must also face threats of an entirely different nature.

The September 11 terrorists killed thousands, not with chemical, biological, or nuclear agents, but with aviation fuel. This terror came low-tech. The terrorists studied flight manuals, not physics. Instead of building missiles, they used primitive knives and turned our technological marvels against us. No one expected such an attack.

When the bioterrorist attack that many had long feared finally came, it too was not what experts had predicted. On October 9, someone sent anthrax-laden letters to Congress and the news media. They either did not understand the sophisticated dispersal mechanisms needed to cause mass casualties from anthrax, or they simply did not care. In this case, the attack was less disastrous than had been feared. After all, delivery mechanisms for biological weapons are well known. By the time President Richard Nixon terminated the U.S. biological weapons program in 1969, the U.S. Army had successfully weaponized and stockpiled anthrax and other agents in hundreds of bombs, bomblets, spray tanks, and assorted munitions. These terrorists used envelopes. So far, the deaths have been few, but the fear and disruption have been significant.

How, then, are we to define the new dangers faced by the United States? The war may get worse. Just as the global audience watched the horror of September 11 unfold, with one terrible event followed by an even worse catastrophe, the scattered anthrax mailings may presage a more determined assault. If, as some intelligence officials believe, the anthrax attacks are the work of domestic extremists, not al Qaeda, then Osama bin Laden’s second act is still to come.

The September 11 terrorists killed thousands, not with chemical, biological, or nuclear agents, but with aviation fuel.

The most devastating of all possible weapons—a nuclear bomb—may be the least likely to be used. It is still possible, however, that a group could have stolen or bought nuclear materials or even a small, tactical nuclear weapon from the stockpile of thousands of such weapons still in Russia, or that Iraq may have constructed a crude device and provided it to the al Qaeda network. Such devices could be smuggled in by boat, plane, or truck. Presented with such a variety of simple, yet effective, methods of delivery, few experts still seriously believe that such a bomb will come on the tip of a ballistic missile.

Chemical or biological attacks on U.S. forces or on the U.S. homeland are a real possibility. Terrorists could strike with potent agents, which are easier to make or obtain than nuclear weapons, and utilize improved delivery mechanisms. Reports of terrorist interest in crop-dusting planes are ominous, but humans may not be the only targets. Terrorists
could attack America’s agricultural production by scattering wheat smut or similar agents, which could kill a substantial portion of the U.S. wheat or corn crop.

Attacks do not have to be catastrophic to cause serious disruption. Car or truck bombs at crowded malls could kill dozens and deliver a mighty blow to the U.S. economy. Additional attacks on critical buildings could follow these strikes, resulting in casualties as great as, or greater than, those of the World Trade Center disaster.

This last issue is worthy of serious study. The collapse of the World Trade Center should teach us that we need to expand our definitions of weapons of mass destruction to include conventional attacks that could cause mass casualties and disruptions. There are 60,000 chemical plants in the United States. A saboteur could turn one of them into an American Bhopal (the town in India where an accident at a Union Carbide pesticide plant released a deadly gas cloud that killed 5,000). A trained nuclear engineer could set off a chain reaction at one of the nation’s 103 nuclear power plants, or an airplane could target the plant, triggering a nuclear disaster far worse than those of Chernobyl or Three Mile Island. There are 9,300 “high hazard” dams whose collapse would cause many human casualties and widespread turmoil. Fifty thousands trucks carrying hazardous materials travel on America’s highways each day; the explosion of a gasoline or chlorine gas truck could kill hundreds. “E-terrorists” could attack some of the twenty-four government computer networks that the General Accounting Office recently found to be inadequately protected, including those of the Departments of Defense and Treasury.

Or computer hackers could simply disable power grids, wreaking havoc in countless American cities.

These are not traditional proliferation problems, but they are now serious national security issues. They cannot be addressed through traditional diplomatic or military measures. By acknowledging that our definition of weapons of mass destruction must now also include what I would call “conventional weapons of mass destruction,” we are forced to expand our definition of national security and change what we mean by national defense. These new threats do not replace traditional proliferation problems; they add to them. This, in turn, has serious implications for our national threat assessments and how we allocate our national defense resources.

**Reassessment.** A major reason why the United States was—and still is—so unprepared for terrorist attacks is that national threat assessments for the past few years have consistently pointed policymakers in the wrong direction. Partisan political bickering over the past decade distorted U.S. intelligence and defense assessments, fundamentally misleading and misdirecting national security resources.²

The two best known threat assessments compiled before September 11 are those prepared by the two commissions chaired by current secretary of defense Donald Rumsfeld. In 1998, the *Report of the Commission to Assess the Ballistic Missile Threat to the United States* warned that the United States faced an urgent threat of attack by ballistic missiles that could be fielded by a hostile state “with little or no warning.” In January 2001, the *Report of the Commission to Assess United States National Security Space Management and Organization* warned just as omi-
nously that the United States risked a "Pearl Harbor" in space unless it immediately launched an expansive and expensive effort to deploy new generations of sensors, satellites, and weapons in space. Together, the reports fortified the conservative national security vision and heavily influenced political debate, threat assessments, and budgetary priorities over the past three years.

Accordingly, until September 11, the top national security priority of the Bush administration had been the development and deployment of a national missile defense system. Budgeted at over $8 billion per year, missile defense is by far the single most expensive weapons program in the defense budget. Senior officials and members of the cabinet made it their top agenda item in countless meetings with NATO allies, Russia, and China. Just a few months before September 11, five cabinet members, including National Security Adviser Condoleezza Rice, traveled to Moscow solely for the purpose of persuading the Russian leadership to acquiesce to a revision of the Anti-Ballistic Missile Treaty. As Maureen Dowd wrote in The New York Times on September 5, "Why can George W. Bush think of nothing but a missile shield? Our president is caught in the grip of an obsession worthy of literature."³

It is fair to ask whether the September attacks could have been prevented if senior officials and summit meetings had addressed cooperative efforts to defend against terrorism rather than missiles. While reports on missile defense and space received overwhelming official and media attention, similar reports and warnings about asymmetric threats and domestic terrorism were largely ignored. Experts have warned of the dangers for years, particularly after the 1993 attack on the World Trade Center, which came close to collapsing the buildings with conventional truck bombs. The Commission on National Security/21st Century, chaired by former senators Gary Hart and Warren Rudman, warned in February 2001 that "the United States will become increasingly vulnerable to hostile attack on the American homeland, and U.S. military superiority will not entirely protect us."⁴ The commission members are now a hot item, but at the time they struggled for attention. Similarly, in December 2001, the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction released its second report. The findings warned, "a terrorist attack on some level inside our borders is inevitable and the United States must be ready."⁵ The commission specifically found an urgent need to "craft a truly 'national' strategy to address the threat of domestic terrorism—conventional, cyber, chemical, biological, radiological and nuclear—from the perspective of deterrence, prevention, preparedness and response."⁶

We need to expand our definitions of weapons of mass destruction to include conventional attacks that could cause mass casualties and disruptions.
Over the past ten years, numerous expert reports have warned that a terrorist group might try to buy or steal nuclear materials—warnings now eerily echoed in reports that al Qaeda operatives have tried to acquire uranium. In January 2001, a special commission chaired by former senator Howard Baker and former White House counsel Lloyd Cutler urged the administration to triple the money spent on securing and eliminating Russia’s nuclear weapons and materials. At a meeting of experts in Washington, D.C., Cutler emphasized that, “Our principal conclusions are that the most urgent unmet national security threat for the United States today is the danger that weapons of mass destruction or weapons-usable material in Russia could be stolen and sold to terrorists or hostile nation-states, and used against American troops abroad, or citizens at home.”

These concerns were noted in some official threat assessments. In February 2001, Admiral Thomas Wilson, director of the Defense Intelligence Agency, told Congress that he feared “a major terrorist attack against United States interests, either here or abroad, perhaps with a weapon designed to produce mass casualties” over the next twelve to twenty-four months. But the prediction was lost in a long list of other concerns.

These clashing threat assessments often provoked debate between Democrats in Congress and the Republican administration. Carl Levin, chairman of the Senate Armed Services Committee, stated in one such exchange:

I’m also concerned that we may not be putting enough emphasis on countering the most likely threats to our national security and to the security of our forces deployed around the world, those asymmetric threats, like terrorist attacks on the USS Cole, on our barracks and our embassies around the world, on the World Trade Center, including possible attacks with weapons of mass destruction and cyberthreats to our national security establishment and even to our economic infrastructure.

Administration officials defended their assessments and budget priorities by arguing that the government was appropriately addressing all threats. But it was clear where the priority lay. Deputy Secretary of Defense Paul Wolfowitz argued:

But when I think about it, what is different about the two [terrorism and missile defense] is, number one, we have some capability against the terrorist threat today....We have no ability to protect ourselves against ballistic missiles. And secondly, and this is the reason we have no ability — or part of the reason we have no ability to protect against ballistic missiles, we have a treaty prohibiting us from doing so.

The day before the attacks, Joseph Biden, chairman of the Senate Foreign Relations Committee, prophetically warned of an exclusive focus on missile defenses in a speech at the National Press Club. He cited the Joint Chiefs’ support of his view that a strategic nuclear attack is less likely than regional conflicts, or major theater wars or terrorist attacks at home and abroad.” If we spend billions on missile defense, he feared, “We will have diverted all that money to address the least likely threat while the real threats...
come into this country in the hold of ship, or the belly of a plane or are smuggled into a city in the middle of the night in a vial in a backpack.” Sadly, he can now add, “in a kamikaze attack.”

Reorientation. Over the past decade there have been repeated efforts to expand the range of what is included in the term national security to include new concepts like global warming. These efforts chewed up pages of journals, but never made a dent in national security budgets. This will be different in the wake of September 11. Now the redefinition is happening on the ground, in events that are affecting millions.

One measure of change is to realize that, since September 11, hundreds of men and women in uniform have died. They did not wear military uniforms, but served in fire departments, police departments, and the postal service. The front lines of this conflict have moved. More precisely, there are two front lines: Afghanistan and America. It is not at all clear that the greater effort is the one coordinated by the Pentagon. The president quickly recognized this new reality and created the Office of Homeland Security to coordinate the domestic battle. Headed by former Pennsylvania governor Tom Ridge, it is likely that this office will grow in stature and authority over the coming years. Americans support the military strikes in Afghanistan, but they are much more personally engaged in the defense of their homes, offices, and airports.

Health has also become a national security issue. The government’s briefings on spores and antibiotics received even more attention than the briefings on targets and strike aircraft. This is not a momentary phenomenon. The country has now developed the collective desire and demand to prepare for future bioterrorist attacks. Nor is this a trivial undertaking; it will require billions of dollars in new federal expenditures. The initial budget skirmishes are already beginning. President Bush has sent Congress a bill that would provide millions of dollars to stockpile vaccines against anthrax and smallpox, but the bill stipulates nothing to improve the health service infrastructure. Senate Democrats are insisting that the government provide money for new staff, training, and detection equipment to the clinics and hospitals that are the first line of defense against infectious disease. Democratic initiatives will likely succeed as the popular acronym “ER” becomes widely identified with “Emergency Response.”

The government will also face new demands to protect critical infrastructure such as dams, power plants, and airports. This will cost billions more and could create entirely new federal services—to improve airport security, for example. From where will the money come? While we struggle with budgets, decades of experience gathered in global efforts to constrain the spread of the traditional weapons of mass destruction can provide some policy guidance.

The first line of defense must be to reduce and prevent the threats at the source. For chemical, biological, and nuclear weapons, existing treaties and organizations are well-suited for the job and now need to be strengthened. The president should immediately implement the recommendations of the Baker-Cutler report to accelerate the elimination and securing of Russian nuclear weapons and materials. The country needs, in the words of the report, “an
enhanced response proportional to the threat.” The largest obstacle to building a nuclear bomb is acquiring the twenty-five kilograms of highly-enriched uranium or eight kilograms of plutonium necessary for the weapon’s core. There are over 1,000 tons of such fissile material in Russia, much of it inadequately guarded. Under current efforts, it will take sixty years to secure all Russian nuclear materials. Clearly, current programs must be bolstered and accelerated.

**When the time comes to use military force, the United States must have the right weapons for the job.**

The Baker-Cutler commission recommends that the United States “secure and/or neutralize in the next eight to ten years all nuclear-weapons usable material located in Russia and prevent the outflow from Russia of scientific expertise that could be used for nuclear or other weapons of mass destruction.” Similarly, now is the time to drastically reduce the number of deployed nuclear weapons in both U.S. and Russian arsenals. The fewer weapons that exist, the lower the chances of theft or diversion of materials or weapons. Reducing U.S. arsenals also increases U.S. leverage in encouraging other nuclear-weapon states to reduce their arsenals.

The United States also needs the ability to inspect other nations for the presence of weapons outlawed under international law. Earlier this year, the Bush administration unfortunately rejected a verification protocol to the Biological Weapons Convention that would have provided for rigorous international inspections of suspected biological weapons facilities. Reconsideration of the administration’s position or proposals for a tougher inspection regime are now in order. With the current level of anxiety, negotiations that might take years under normal circumstances may be adopted within months if the United States puts its formidable diplomatic muscle behind them.

The United States must also reduce the vulnerability of critical infrastructure. “The whole world has been turned upside down” by the September 11 attacks, says Richard Meserve, Chairman of the Nuclear Regulatory Commission, which oversees commercial security measures for nuclear-power plants. “We have to re-examine our entire capability to withstand a terrorist attack.” Corbin McNeill Jr., chairman of the Exelon Corporation, says future nuclear power plants should be buried, leaving “no vital components above ground.” It may also mean that we should not build them at all. We will face similar decisions on how, or even whether, we should build other new facilities such as skyscrapers, dams, and chemical plants. All must now be evaluated in terms of minimizing vulnerabilities, not just costs.

Critical to preventing future terrorist attacks will be expanding and institutionalizing the exchange of information among the intelligence services of key countries—and, some would say, within our own national intelligence community. The United States is now gathering information from countries whose
cooperation would have been unthinkable a few months ago, including Iran and Syria. Exchanges extend beyond military and intelligence collaboration. The war on terrorism is being fought, in large part, not by traditional military means but by agencies that fall under the purview of states’ interior ministries: domestic law enforcement, customs, treasury, immigration, and investigative agencies. This cooperation requires careful maintenance of the unprecedented international coalition against terrorism constructed by President Bush.

Realistically, however, efforts to prevent and reduce threats will not be enough. The United States must also be ready to respond to future attacks. This will require capable military forces and a strategy suited to the new face of warfare. Military forces, and the willingness to use them, may serve as a deterrent to any nation with weapons of mass destruction, but may not deter suicidal subnational or transnational terrorist groups. When the time comes to use military force, the United States must have the right weapons for the job. James Roche, the secretary of the Air Force, struck the right chord when he spoke out against buying more B-2 bombers. Though these planes were featured extensively in media footage of the airstrikes on Afghanistan, they must fly over two days to drop bombs that can be more efficiently delivered by other, closer aircraft. Roche said, “I have yet to find a general who says we need more B-2s.”

He called instead for fast, mobile mini-bombers that can hit moving targets, and for upgrades of the sensors and data networks that link aircraft.

But response is much more than a military matter. The anthrax envelopes are a wake-up call to the dangers of a serious bioterrorist event. A public health infrastructure that can detect and respond to attacks, treat the injured, and contain a disease before it becomes an epidemic should be part of a broader “first response.” The third report of the Hart-Rudman Commission concludes:

Managing the consequences of a catastrophic attack on the U.S. homeland would be a complex and difficult process. The first priority should be to build up and augment state and local response capabilities. Adequate equipment must be available to first responders in local communities. Procedures and guidelines need to be defined and disseminated and then practiced through simulations and exercises.

Reorienting U.S. national security and proliferation policies requires policymakers to take homeland defense seriously. The commission members point out that prevention and protection come first, that “U.S. foreign policy should strive to shape an international system in which just grievances can be addressed without violence,” and that “verifiable arms control and nonproliferation efforts must remain a top priority.”

**Conclusion.** This should be a moment when experts and political leaders come together to compromise on individual agendas for the sake of a unified response to those who attack the United States. It should be possible for the United States to pursue missile defense research while redirecting defense funds to airport security, emergency management, and counter-intelligence operations. It can carefully monitor rogue nations while also focusing on major transnational terrorist groups. It can revise treaties where
necessary, but still reinforce international alliances to isolate those who operate beyond the pale. It can pursue and punish those responsible while attempting to resolve the underlying conflicts and conditions that breed terrorism. Redefine, reassess, reorient. This time, Americans must take the warnings seriously.

NOTES
1 The weapon thought most likely to be used was the E133 cluster bomb, holding 536 biological bomblets, each containing 35 milliliters of a liquid suspension of anthrax spores. A small explosive charge would, upon impact, turn the liquid into aerosol to be inhaled by the intended victims. At the time the program was dismantled, the United States held in storage some 40,000 liters of anti-personnel biological warfare agents and some 5,000 kilograms of anti-agriculture agents. All were destroyed. The Soviet Union had a similar, if not larger, program. Former first deputy director of Biopreparat, Kenneth Alibek, testified before the U.S. Senate that the Soviet program employed over 60,000 people and stockpiled hundreds of anthrax weapon formulations and tons of smallpox and plague (http://www.fas.org/irp/congress/1998_hr/alibek.htm).
6 Ibid.
8 Vice Admiral Thomas R. Wilson, Defense Intelligence Agency, before the Senate Select Committee on Intelligence, 7 February 2001.
10 Deputy Secretary of Defense Paul Wolfowitz, Hearing of the Senate Armed Services Committee: Missile Defense, July 17, 2001. For Fiscal Year 2002, the federal government budgeted $1.7 billion to combat weapons of mass destruction terrorism, as part of a $9.7 billion budget for anti-terrorism efforts overall.
14 Ibid.