

# The Role of U.S. Nuclear Weapons after September 11

Acute awareness of the Cold War's pervasive nuclear threats kept the issue of U.S. nuclear policy at the forefront of the national consciousness for decades. With the fall of the Soviet Union, however, this awareness began to fade. The doctrine on which the massive U.S. nuclear arsenal was based became less relevant as attention turned to arms control and ways to cope with other states' emerging nuclear capabilities. As a result, more than a decade after the end of the Cold War, U.S. nuclear posture still reflects decisions made during a fundamentally different strategic era. A renewed nuclear debate is long overdue. Today, the heavy use of U.S. armed forces and the dramatic threats posed both by terrorism and the proliferation of weapons of mass destruction (WMD) offer the opportunity to, and emphasize the urgency of, determining the roles and missions of U.S. nuclear weapons.

This survey reviews the literature available on the role of U.S. nuclear weapons in the post-Cold War and the post-September 11 security environment. It begins with a review of the debate that took place in the 1990s, when scholars and policymakers tried to grapple with post-Cold War exigencies. The survey then frames a new debate on nuclear deterrence and the role of nuclear weapons in today's security environment by reviewing contemporary challenges and examining how nuclear forces might address them. Finally, it suggests issues that demand further consideration and apprises readers of the stakes of this debate.

Even though it is important to consider the many issues related to nuclear weapons policy, including nonproliferation strategy, missile defenses, and weapons testing, it is beyond the scope of this survey to discuss all of them

---

Josiane Gabel is a research assistant at CSIS. The author would like to thank Clark Murdock and Brad Roberts for their valuable feedback.

---

© 2004 by The Center for Strategic and International Studies and the Massachusetts Institute of Technology  
*The Washington Quarterly* • 28:1 pp. 181–195.

in their entirety. Rather, it looks strictly at the role of nuclear weapons in U.S. grand strategy. Moreover, the review does not attempt to discuss the individual events that have changed the nuclear landscape since the end of the Cold War, such as the emergence of India and Pakistan as nuclear powers or other states' renunciation of their nuclear programs. Rather, the survey examines broad changes in and challenges to the U.S. security environment. Finally, the discussion will not offer a detailed consideration of official documents related to nuclear policy but instead will look at policy as the background for the literature, which is the primary focus of this article.

## **Nuclear Weapons after the Cold War**

---

The end of the superpower rivalry between the United States and the Soviet Union produced a considerable volume of literature on the future of nuclear weapons. Deep cuts in the arsenals and nuclear budgets of the United States and Russia were widely recognized as the logical result of the new relationship between the two countries, but the reduction did not reflect a consensus on the future *raison d'être* of nuclear arms. Indeed, distinct and sometimes conflicting intellectual currents on this topic emerged.

### **MARGINALIZING NUCLEAR WEAPONS**

Developments during the 1990s provided many hopeful signs that the importance of nuclear weapons was in decline, including groundbreaking arms control agreements, unilateral steps to cut tactical weapons, the indefinite extension of the Nuclear Non-Proliferation Treaty (NPT), and the renunciation of nuclear capabilities by the former Soviet states of Kazakhstan, Belarus, and Ukraine as well as other nations such as South Africa. The perception of nuclear weapons and of their utility shifted drastically, both due to a general sense of relief at seeing the end of the nuclear standoff and to the rise of a strong intellectual movement that devalued and marginalized nuclear forces. Nuclear disarmament gained attention and credibility thanks to the literature produced by highly respected senior military officers and civilians such as Representative Les Aspin (D-Wis.) who, while chairman of the House Armed Services Committee, wrote a highly visible paper entitled "From Deterrence to Denuking."<sup>1</sup> Later, the general who had overseen the U.S. nuclear forces at the end of the Cold War, Gen. George Lee Butler, astonished the world when he spoke of a moral imperative to eliminate nuclear

---

1. Les Aspin, "From Deterrence to Denuking: Dealing with Proliferation in the 1990s," *Shaping a Nuclear Policy for the 1990s: A Compendium of Views*, 102d Cong., 2d sess., January 21, 1992.

weapons and declared it his goal “to bend every effort, within my power and authority, to promote the conditions and attitudes that might someday free mankind from the scourge of nuclear weapons.”<sup>2</sup> The same year, a group of 58 current and retired high-ranking military officers from around the world issued a famous statement calling for a commitment to international nuclear disarmament.<sup>3</sup>

Other scholars and decisionmakers recognized that, short of abolition, it was in the United States’ interest to reduce the political salience of nuclear weapons in international affairs. A lively debate followed, and a growing consensus emerged that lower levels of nuclear armament would make the United States and its allies more secure. Two of the most important measures proposed were the removal of nuclear weapons from hair-trigger alert levels to reduce the risk of an accidental launch and the adoption of a “no first use” policy.<sup>4</sup> Another proposal was for “virtual nuclear arsenals” that would retain the components of nuclear weapons but not the assembled weapons themselves, thus representing “an interim step between low levels of nuclear armament and abolition.”<sup>5</sup>

Over time, the elite’s extensive and impassioned literature on disarmament, deemphasis of nuclear weapons, and focus on arms control appeared to confirm the “nuclear taboo”—the public perception that nuclear weapons are immoral and that a global norm exists against their use—and the im-

**The consensus and the pressure to adapt U.S. nuclear doctrine have been lacking.**

2. Gen. George Lee Butler, “The General’s Bombshell: Phasing Out the U.S. Nuclear Arsenal,” *Washington Post*, January 12, 1997, p. C1. General Butler also served on the Canberra Commission. See “Report of the Canberra Commission on the Elimination of Nuclear Weapons,” August 1996, [http://www.dfat.gov.au/cc/cc\\_report\\_mnu.html](http://www.dfat.gov.au/cc/cc_report_mnu.html) (accessed October 12, 2004).
3. “Statement on Nuclear Weapons by International Generals and Admirals,” December 5, 1996, <http://www.nuclearfiles.org/etmilitarypers/genandadmstatement.html> (accessed October 12, 2004).
4. See Committee on International Security and Arms Control of the U.S. National Academy of Sciences, *The Future of U.S. Nuclear Weapons Policy* (Washington, D.C.: National Academies Press, 1997), pp. ES-6–ES-7 (hereinafter NAS committee report); George Perkovich, “Nuclear First Use ... For What?” *Los Angeles Times*, December 10, 1998, p. 17.
5. Michael J. Mazarr, *Virtual Nuclear Arsenals: A Second Look* (Washington, D.C.: CSIS, January 1999), p. 4. See Michael J. Mazarr, “Virtual Nuclear Arsenals,” *Survival* 37, no. 3 (Autumn 1995); Michael J. Mazarr, ed., *Nuclear Weapons in a Transformed World: The Challenge of Virtual Nuclear Arsenals* (New York: St. Martin’s Press, 1997).

pression that nuclear weapons were irrelevant in the post–Cold War world.<sup>6</sup> What remains of these movements today? The policy of no first use has drawn more debate due to the Bush administration’s policies on preemption and preventive war,<sup>7</sup> and calls for abolition and for removing nuclear weapons from high alert levels remain strong among devoted advocates.<sup>8</sup> In the summer of 2004, in a speech reminiscent of the post–Cold War period, former senator Sam Nunn (D-Ga.) urged “the president of the United States and the president of Russia to offer a new triumph of sanity and end their nations’ Cold War nuclear force postures by removing their nuclear weapons from hair-trigger status, a step back from mutual-assured destruction.”<sup>9</sup>

### THE SECOND NUCLEAR AGE

Despite the optimism of the immediate post–Cold War period and the consensus on the benefits of arms control, the 1990s introduced new elements of nuclear danger to the international security environment. Indeed, the concept of a “second nuclear age” was born in the mid-1990s, referring to the emerging nuclear landscape replacing that of the bipolar era. In this second nuclear age, the greater number of nuclear players and their various cultural differences complicated the traditional concept of deterrence. Indeed, the aims of these new actors differed widely from the U.S. experience with the Soviet Union. The new nuclear players’ characteristics included covert nuclear programs, roots in nationalism, regional concerns, willingness to cooperate with other proliferators, and vulnerability to political change. These aspects made them unfamiliar and dangerous parties with whom the United States now had to contend. Other factors further complicated this landscape, including the availability of nuclear technology, the deterioration of command and control over nuclear mate-

- 
6. On the nuclear taboo, see Nina Tannenwald, “The Nuclear Taboo: The United States and the Normative Basis Nuclear Non-Use,” *International Organization* 53, no. 3 (Summer 1999): 433–468.
  7. See Tom Milne, “No First Use of Nuclear Weapons: Workshop Report” (papers, Pugwash Meeting no. 279, London, November 15–17, 2002), <http://www.pugwash.org/reports/nw/milne.htm> (accessed October 12, 2004).
  8. See Jonathan Schell, *The Abolition* (New York: Alfred A. Knopf, 1984); Jonathan Schell, “Cold War to Star Wars,” *Nation*, June 28, 2004. Schell is a long-time abolitionist. On alert levels, see Bruce Blair, “Bruce Blair’s Nuclear Column,” <http://www.cdi.org/blair/> (accessed October 12, 2004).
  9. “Remarks of Former Senator Sam Nunn, D-GA” (speech, Carnegie International Non-Proliferation Conference, Washington, D.C., June 21, 2004), <http://www.ceip.org/files/projects/npp/resources/2004conference/speeches/nunn.htm> (accessed October 12, 2004).

rials in the former Soviet Union (known as “loose nukes”), and the increasing importance of nonstate actors.<sup>10</sup>

These new strategic threats compelled many observers to view the new era as more than simply the post–Cold War period. Developments in these years made clear that the security context had profoundly changed but remained one wherein nuclear weapons played a prominent role. Therefore, a strong U.S. nuclear deterrent remained relevant and necessary.

### THE CONSEQUENCES OF INERTIA

The 1990s thus saw parallel efforts to deemphasize nuclear weapons and to emphasize their renewed importance in international relations.<sup>11</sup> Unfortunately, the failure to integrate these contrasting currents of thought into a viable nuclear posture that adapted to the situation resulted in inertia. The 1994 Nuclear Posture Review (NPR),<sup>12</sup> a strategic review mandated by Congress, and Presidential Decision Directive (PDD) 60 in 1997<sup>13</sup>—the two most authoritative statements on nuclear policy of the 1990s—brought no fundamental changes.<sup>14</sup> These statements endorsed a smaller role for nuclear weapons in security strategy and claimed that the United States would be a leader in nuclear reductions (to numbers decided by START II) but also established that nuclear weapons would continue to play a role as a hedge against future contingencies. To observers,

**The U.S. nuclear posture affects nuclear decisions made by partners and adversaries.**

10. Keith B. Payne, *Deterrence in the Second Nuclear Age* (Lexington, Ky.: University of Kentucky Press, 1996); Colin S. Gray, *The Second Nuclear Age* (Boulder, Colo.: Lynne Rienner Publishers, 1999); Paul Bracken, “The Second Nuclear Age?” *Foreign Affairs* 79, no. 5 (January/February 2000): 146–156; Michael Rühle, “America and Europe in the Second Nuclear Age,” *AICGS Advisor*, February 19, 2004, <http://www.aicgs.org/c/ruhlec.shtml> (accessed October 12, 2004).
11. For an open debate between these two sides, see Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W. W. Norton, 1995).
12. For summaries, see Department of Defense, “Annual Defense Report to the President and the Congress” February 1995, pp. 83–92, <http://www.defenselink.mil/execsec/adr95/index.html> (accessed October 26, 2004); Senate Armed Services Committee, *Briefing on Results of the Nuclear Posture Review*, 103rd Cong., 2d sess., 1994, S. Hrg. 103-870.
13. The text of this document is classified. For a summary, see “PDD/NSC 60, Nuclear Weapons Employment Policy Guidance,” November 1997, <http://www.fas.org/irp/offdocs/pdd60.htm> (accessed October 12, 2004).
14. Janne E. Nolan, *An Elusive Consensus: Nuclear Weapons and American Security After the Cold War* (Washington, D.C.: Brookings Institution, 1999), pp. 35–62.

this policy of “lead and hedge” amounted to “business as usual, only smaller.”<sup>15</sup> Some saw this approach as an inability to cope with post–Cold War challenges that came with implementing extensive arms control agreements. Safely storing and destroying thousands of nuclear warheads and fissile material, as well as verifying and building on agreements, were overwhelming new tasks for policy managers.<sup>16</sup> Fred Iklé, President Ronald Reagan’s undersecretary of defense, lamented this lack of change: “Alas,

new thinking has been obstructed by the Cold War’s nuclear detritus and by ingrained habits of thinking.”<sup>17</sup>

In retrospect, it is apparent that, at a time when the changing security environment demanded that the United States adapt its nuclear doctrine to new realities, both the consensus and the pressure to do so were lacking. Although public relations required downplaying the existence as well as utility of nuclear weapons and showing commit-

ment to reducing the arsenal in keeping with the NPT, the threats posed by new nuclear players ensured that nuclear weapons would remain relevant.<sup>18</sup> This conundrum remained unresolved. As one critic noted, the “unfortunate combination of stasis and neglect” after the Cold War kept the United States from adapting a nuclear policy that increasingly risked appearing to “[wither] away by default.”<sup>19</sup>

Therefore, today’s experts and policymakers confront a pressing question: How should the role of nuclear weapons be defined at a time when the United States still faces nuclear threats but its use of nuclear weapons has been delegitimized?

**Existing literature has had mixed success in reacting to emerging strategic requirements.**

- 
15. Glenn Buchan, “Nuclear Weapons and U.S. National Security Strategy for a New Century,” in *Strategic Appraisal: United States Air and Space Power in the 21st Century*, eds. Zalmay Khalilzad and Jeremy Shapiro (Santa Monica, Calif.: RAND, 2002), p. 236.
  16. Robert A. Manning, “The Ultimate Weapon Redux? U.S. Nuclear Policy in a New Era,” in *Nuclear Weapons: A Great New Debate*, ed. Burkard Schmitt (Paris: Institute for Security Studies of WEU, July 2001), p. 67.
  17. Fred C. Iklé, “Facing Nuclear Reality,” *Wall Street Journal*, January 2, 1996, reprinted in *The Washington Quarterly* 20, no. 3 (Summer 1997): 87.
  18. Jonathan Schell, “The Folly of Arms Control,” *Foreign Affairs* 75, no. 9 (September/October 2000): 23–24, 41.
  19. Buchan, “Nuclear Weapons and U.S. National Security Strategy for a New Century,” p. 227; Glenn Buchan et al., *Future Roles for U.S. Nuclear Weapons* (Santa Monica, Calif.: RAND, 2003), p. 8.

## Coping with Contemporary Challenges

---

As long as nuclear weapons exist in the rest of the world, the United States will retain its own nuclear arsenal. As early as 1983, the Harvard-sponsored book *Living with Nuclear Weapons* posed the question, "Why not abolish nuclear weapons?" The study offered a simple answer: "Because we cannot," explaining that "mankind's nuclear innocence, once lost, cannot be regained."<sup>20</sup> Most experts continue to recognize the validity of this reasoning. They agree that "proposals for complete disarmament are seductive but ultimately dangerous. The knowledge of how to build nuclear weapons, and the desire to build them, cannot be wished away."<sup>21</sup> No U.S. president would surrender the nation's nuclear capability as long as other countries are able to acquire nuclear weapons or other nuclear threats confront the United States. Existing literature identifies a number of threats in today's security environment that should shape the role of U.S. nuclear weapons.

### DETECTING NEAR-PEER COMPETITORS

A peer competitor similar in scope to the Soviet Union is extremely unlikely to appear in the near future. Nevertheless, other powers remain that could potentially pose a serious threat to the United States because of their strong conventional military capabilities, economic power, and credible nuclear forces. Determining which countries belong to this category of "near-peer competitors" can be contentious, but this survey will consider the two most prominent states, Russia and China.

The cooperative approach to arms reduction to which Presidents George W. Bush and Vladimir Putin agreed in the Treaty of Moscow may reflect the increasing level of trust between the two nations, in contrast to the arms control regime required during the 1990s.<sup>22</sup> Despite deep reductions in its arsenal, however, Russia still has a residual nuclear force capable of completely devastating the United States. Because of that fact alone, Russia cannot be left out of Washington's nuclear planning. Moreover, for Russia, nuclear capabilities are the key to national defense and security because the decline of its conventional forces means that "today's Russia is a pre-eminent military

---

20. Albert Carnesale et al., *Living with Nuclear Weapons* (Cambridge, Mass.: Harvard University Press, 1983).

21. Ivo H. Daalder and James M. Lindsay, "A New Agenda for Nuclear Weapons: On Nuclear Weapons, Destroy and Codify," *Policy Brief*, no. 94 (February 2002): 3.

22. James A. Russell and James J. Wirtz, "A Quiet Revolution: Nuclear Strategy for the 21st Century," *Joint Forces Quarterly*, no. 33 (Winter 2002–2003): 10.

power *only* due to its nuclear arsenal.”<sup>23</sup> Russia’s military exercises in past years have reflected this thinking, including the May 2003 exercises involving hypothetical nuclear strikes on the United States,<sup>24</sup> and further emphasize the need for U.S. nuclear policy to contend with Russian nuclear power.

The relationship between the United States and China has traditionally received less attention, but many experts consider China a more significant wild card in the strategic landscape than Russia. China is a rising super-

power in a region of the world that the U.S. government considers a strategic interest, and Beijing has been ambitiously modernizing and expanding its nuclear arsenal since the early 1990s.<sup>25</sup> Moreover, tensions over Taiwan have long colored the Sino-U.S. relationship, and Chinese fears of nuclear blackmail over the status of the island mean that China “will modernize its force so as to overcome any bar that America sets.”<sup>26</sup>

**Is the U.S. nuclear posture still credible in the eyes of diverse, evolving adversaries?**

Many experts agree that old theories of deterrence still apply both in the Russian and Chinese cases. The threat of mutually assured destruction remains applicable because of the size of these countries’ arsenals and the ease of identifying the origin of an attack. Analysts agree that prudence dictates the need to maintain a hedge against any such nuclear power. A more nuanced approach to the United States’ near peers, however, also recognizes the importance of the cooperative aspects of the relationships between the great powers. The common interests and responsibilities between the United States and Russia in the global war on terrorism and between the United States and China with regard to the North Korean nuclear issue, as well as the countries’ economic cooperation, benefit all parties. The current direction of U.S. relations with Russia and China markedly decreases the prominence of nuclear matters and makes armed conflict unlikely. Therefore, meeting the challenge presented by today’s

---

23. Dmitri Trenin, “Russia and the Future of Nuclear Policy,” in *Nuclear Weapons: A Great New Debate*, ed. Burkard Schmitt (Paris: Institute for Security Studies of WEU, July 2001), p. 112 (emphasis in original).

24. Nicole C. Evans, “Missile Defense: Winning Minds, Not Hearts,” *Bulletin of the Atomic Scientists* 60, no. 5 (September/October 2004): 48.

25. Harold Brown, Joseph W. Prueher, and Adam Segal, *Chinese Military Power* (New York: Council on Foreign Relations Press, 2004). See Department of Defense, “Annual Report on the Military Power of the People’s Republic of China,” <http://www.defenselink.mil/pubs/d20040528PRC.pdf> (accessed October 12, 2004).

26. Brad Roberts, *China-U.S. Nuclear Relations: What Relationship Best Serves U.S. Interests?* (Alexandria, Va.: Institute for Defense Analyses, August 2001), p. ES-1.



near-peer competitors demands combining a reasonable hedge against the great nuclear powers while deemphasizing nuclear competition to turn former adversaries into strong partners.<sup>27</sup>

### **ADAPTING TO ROGUE STATES**

In the absence of a peer competitor of the Soviet Union's magnitude, regional powers have become more important in the U.S. strategic environment. So-called rogue states, as sponsors of terrorism, WMD proliferators, and regional competitors, are viewed by the United States as a security threat. This threat has already played out dramatically in Afghanistan (prior to September 11), Iran, and North Korea, among others.

For years, the 1991 Persian Gulf War appeared to present a good case study of nuclear deterrence against small, reckless states possibly armed with WMD. In January 1991, U.S. secretary of state James Baker reportedly warned Iraq's foreign minister, Tariq Aziz, that, if Iraq used chemical or biological weapons, the United States would ensure Saddam Hussein's regime was toppled. Observers understood this as implicitly threatening nuclear retaliation, but the lessons of this case study are not clear. There was some success in the deterrent threat because chemical and biological weapons were not used, but it did not stop Iraq from invading Kuwait or launching Scud missiles at Saudi Arabia and Israel.<sup>28</sup>

The various experiences of the United States with rogue states since the Gulf War prove that no single nuclear policy can meet these broad threats.<sup>29</sup> Indeed, simply categorizing all these states together as rogue states does not do justice to the complexity of the threats they present. As one scholar has observed, "The problem with this view is that it assumes all rogue states are alike in their reckless tendencies to ignore deterrent threats. ... Leaders, and therefore regimes, vary in their tendency to undertake risky behavior."<sup>30</sup>

---

27. Brad Roberts, *Tripolar Stability: The Future of Nuclear Relations Among the United States, Russia, and China* (Alexandria, Va.: Institute for Defense Analyses, September 2002), p. S-6. See Michael May, "September 11 and the Need for International Nuclear Agreements" (report, Fondation pour la Recherche Stratégique, Paris, March 2003), <http://cisac.stanford.edu/publications/20557/> (accessed October 12, 2004).

28. Lawrence Freedman, "Europe and Deterrence," in *Nuclear Weapons: A Great New Debate*, ed. Burkard Schmitt (Paris: Institute for Security Studies of WEU, July 2001), pp. 88–89.

29. For case studies and an analysis of our experiences with rogue states and U.S. rogue-state policy, see Robert S. Litwak, *Rogue States and U.S. Foreign Policy: Containment After the Cold War* (Washington, D.C.: Woodrow Wilson Center Press, 2000).

30. Jasen J. Castillo, "Nuclear Terrorism: Why Deterrence Still Matters," *Current History* 100, no. 659 (December 2003): 426–428.

This approach presents us with the following challenge: If deterrence is based on an adversary's perception, but the United States' adversaries vary greatly and therefore complicate its understanding of their perceptions, how can a nuclear deterrent be effectively evaluated? According to Keith Payne, the Cold War—era concept of deterrence itself is thus thrown into question. The specific details of time, place, culture, politics, decisionmaking, and even personality—referred to as “key local conditions”—which the United States knew and understood in its

## How can nuclear threats be adapted to terrorists' calculus?

relations with the Soviet Union, are now drastically different.<sup>31</sup> As the French expert Thérèse Delpech remarked in 2001, “[T]he newcomers may play havoc with the delicate rules of deterrence.”<sup>32</sup>

The 2001 NPR—of which no unclassified version exists but substantial portions were leaked<sup>33</sup>—attempted to address this challenge by establishing initiatives to ex-

plore the potential development of a new generation of nuclear weapons in order to give the president more flexibility to respond to diverse contingencies. In theory, these weapon programs would put a greater range of targets at risk by including a robust nuclear earth penetrator, or “bunker-buster,” which could reach enemy leaders or WMD stockpiles in underground facilities and could minimize the collateral damage of some nuclear attacks by including lower-yield weapons.<sup>34</sup> The plans to conduct research into these new capabilities have sparked a sharp controversy. Some critics have attacked the technical feasibility of such weapons,<sup>35</sup> while others have pointed out that

31. Keith B. Payne, “Deterrence: A New Paradigm” (presentation, 34th IFPA-Fletcher Conference on National Security Strategy and Policy, National Institute for Public Policy, Fairfax, Va., December 2–3, 2003), p. 1.

32. Thérèse Delpech, “Nuclear Weapons—Less Central, More Dangerous?” in *Nuclear Weapons: A Great New Debate*, ed. Burkard Schmitt (Paris: Institute for Security Studies of WEU, July 2001), p. 16.

33. The Nuclear Posture Review was delivered by the Bush administration to Congress on December 31, 2001, and was announced at a Pentagon press briefing on January 9, 2002. For the transcript of the briefing, see [http://www.defenselink.mil/news/Jan2002/t01092002\\_t0109npr.html](http://www.defenselink.mil/news/Jan2002/t01092002_t0109npr.html) (accessed October 12, 2004). The report has not been made public, but portions have been leaked to the press. For substantial excerpts, see <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm> (accessed October 12, 2004).

34. For a description of these initiatives, see Jonathan Medalia, “Nuclear Weapon Initiatives: Low-Yield R&D, Advanced Concepts, Earth Penetrators, Test Readiness,” *CRS Report for Congress*, RL 32130, March 8, 2004, <http://www.fas.org/spp/starwars/crs/RL32130.pdf> (accessed October 12, 2004).

35. For example, Michael A. Levi, “Dreaming of Clean Nukes,” *Nature* 428, no. 29 (April 2004): 892.

the development of new nuclear capabilities by the United States would in effect give clearance to others to do the same, possibly prompting worldwide proliferation. Arms control advocates also worry that research into new models of weapons could lead to the end of the U.S. nuclear testing moratorium, again acting as a signal to other states that they could do so as well.<sup>36</sup> Finally, there is concern that more “usable” nuclear weapons would blur the line between conventional and nuclear capabilities, lowering the nuclear threshold by giving nuclear capabilities battlefield uses.<sup>37</sup>

Still, the debate over the possible role of nuclear weapons vis-à-vis rogue states is wider than the debate over these new capabilities. Experts present a broad range of opinions about the effects of U.S. nuclear policy on the decisionmaking of rogue leaders. Some assert that the threat of nuclear retribution by the United States, even with its existing force structure, can always deter another state because the costs are too high for even the most reckless regimes to risk an attack or transfer WMD to terrorist groups.<sup>38</sup> Others indicate that rogue states appear to be immune to U.S. conduct because their nuclear decisions are rooted primarily in the dynamics of regional security.<sup>39</sup> Still others point out that the ultimate sanction for rogue-state leaders is not the use of nuclear weapons against their people, but the regime’s removal from power.<sup>40</sup>

### CONFRONTING TERRORIST NETWORKS

There is a broad consensus that the greatest danger the United States currently confronts is the nexus between WMD and terrorism. Unfortunately, there is also a near consensus that U.S. nuclear weapons do not play a clear

- 
36. On opposition to the NPR’s weapon initiatives, see Center for Arms Control and Non-Proliferation, “Nuclear Bunker Busters: Unusable, Costly, and Dangerous,” April 12, 2002, <http://www.armscontrolcenter.org/nukes/bunkerbusters.html> (accessed October 12, 2004); Daryl G. Kimball, “Support Efforts to Cut Funding for New Nuclear Weapons Capabilities,” September 16, 2003, <http://www.armscontrol.org/pressroom/2003/newnucweaponsfunding.asp> (accessed October 12, 2004); Robert W. Nelson, “Nuclear Bunker-Busters, Mini-Nukes, and the U.S. Nuclear Stockpile,” *Physics Today*, November 2003, pp. 32–37.
37. See Hans M. Kristensen, “Preemptive Posturing: What Happened to Deterrence,” *Bulletin of the Atomic Scientists* 58, no. 5 (September/October 2002): 54–59.
38. Castillo, “Nuclear Terrorism,” p. 427.
39. Michael A. Levi, “Nuclear Exchange,” *New Republic Online*, September 24, 2003, <http://www.brookings.edu/views/op-ed/levi/20030925.htm> (accessed October 8, 2004); Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings Institution Press, 2004), p. 323.
40. Michèle A. Flournoy and Clark A. Murdock, *Strengthening the Nuclear Deterrent* (Washington, D.C.: CSIS, 2002), p. 30.

**In what scenarios might the public accept or even demand a nuclear strike?**

role in meeting this threat. There are two key reasons. First, as recent experience has demonstrated, individuals implacably opposed to U.S. values and willing to die for their cause pose an insurmountable challenge to deterrence theory. The decisionmaking of leaders who are fanatical, willing to martyr themselves, or incommunicado is not understood well enough to know what they may hold dear. Second, transnational networks pose the problem of finding identifiable targets. Terrorist organizations govern no territory, and their leadership is elusive. The idea of a nuclear strike against a state, even a rogue state, where terrorists operate is clearly problematic, especially as the number of countries where terrorists are present or not well controlled increases.<sup>41</sup> Therefore, the operational approach to deterrence—holding at risk target sets of value to the leadership of the adversary—cannot be applied here in its traditional way.

Moreover, a U.S. nuclear retaliatory strike may be precisely what a terrorist organization such as Al Qaeda seeks. In their minds, the subsequent devastation and chaos would reveal the (presumed) evil nature of the United States, accomplishing the goals that terrorists may pursue. Terrorism has thus proven to be the greatest challenge to the U.S. nuclear posture and possibly also a sign that the significance of nuclear weapons is in decline amid new threats to national security.

### **HEDGING AGAINST STRATEGIC UNCERTAINTY**

Along with the awareness of terrorism, the most challenging new element in the U.S. security environment is uncertainty. The directions that rogue states decide to take, the success of political transitions in Russia and China, the stakes of territorial disputes, and the ability of terrorists to acquire WMD have created a rapidly evolving security environment. In this context, it appears vital for the U.S. government to maintain strong and adaptable nuclear forces as a hedge against future contingencies. The 2001 NPR highlighted this necessity by providing for a “responsive infrastructure,” a commitment to revitalizing the nuclear infrastructure so that the arsenal could be quickly adapted to emerging threats.

---

41. Lawrence J. Korb, *A New National Security Strategy in an Age of Terrorists, Tyrants, and Weapons of Mass Destruction* (New York: Council on Foreign Relations Press, 2003), p. 68; May, “September 11 and the Need for International Nuclear Agreements.”

Broad consensus exists on the need for a flexible but strong nuclear posture in a dynamic security environment,<sup>42</sup> reflecting the perception that nuclear weapons remain the ultimate guarantor of a nation's security. The unique characteristics of these weapons—their almost unlimited destructive power, psychological impact, and their ability to convey global status—make them the capstone of military capability.<sup>43</sup> They are the only weapons that exercise existential deterrence, a state's ability to deter other actors simply through their ownership.<sup>44</sup> Therefore, maintaining a preeminent nuclear arsenal ensures that a nation can avoid strategic surprises after other states or transnational actors develop new military capabilities.

### **ASSURING ALLIES AND PARTNERS**

All the challenges outlined above have referred explicitly to the security of the United States. It is important to point out that U.S. interests also include the security of and commitment to allies and partners. Nonnuclear allies of the United States, such as Japan and Germany, have relied on the U.S. nuclear deterrent for decades. This is partly a political function; in the case of Europe, extended deterrence is a 60-year-old symbol of U.S. commitment to European security and to burden sharing.<sup>45</sup> Deterrence also serves as a military link between allies.<sup>46</sup> More important, however, for allies such as Japan, South Korea, Taiwan, and some NATO states, the stability both of the U.S. deterrent and extended deterrence guarantees are a significant part of these countries' own strategic calculus. As studies since the Goodpaster Committee's work in 1995 through to 2004's *The Nuclear Tipping Point* have argued, the credibility and reliability of U.S. nuclear assurances are necessary to keep countries such as South Korea, Taiwan, and Turkey from reconsidering their decisions to be nonnuclear

---

42. See Daalder and Lindsay, "A New Agenda for Nuclear Weapons," p. 2; Flournoy and Murdock, *Strengthening the Nuclear Deterrent*, p. 63.

43. Buchan, "Nuclear Weapons and U.S. National Security Strategy for a New Century," pp. 238–239.

44. NAS committee report, p. ES-4.

45. Stanley R. Sloan, "NATO Nuclear Strategy Beyond the Cold War," in *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities*, eds. Jeffrey A. Larsen and Kurt J. Klingenberg (Colorado Springs: USAF Institute for National Security Studies, June 2001), p. 40.

46. David S. Yost, "The U.S. and Nuclear Deterrence in Europe," *Adelphi Summary*, no. 326, March 1999, <http://www.iiss.org/adelphisummaries.php?volume=326&submit=Go> (accessed October 12, 2004); Anthony Cordesman, "The Impact of the Nuclear Posture Review: Analytic Summary," January 10, 2002, p. 5, <http://www.csis.org/burke/mb/USnprOV011002.pdf> (accessed October 12, 2004).

states.<sup>47</sup> Thus, the U.S. nuclear posture has implications in the nuclear arena that stretch beyond the actions of current and future adversaries to affect the nuclear decisions made by partners around the world.

## **Revitalizing the U.S. Nuclear Debate**

---

The literature on the role of nuclear weapons since the end of the Cold War and in the wake of the September 11 attacks has had mixed success in reacting to emerging strategic requirements. In hindsight, experts have criticized the lack of adaptation following the end of the bipolar era and the start of the second nuclear age despite scholars' and policymakers' prolific writing on arms control. Today's challenge is therefore clear: to avoid the inertia of the past by achieving a stronger consensus, as the security context evolves, on the strategic purpose and the future structure of the U.S. nuclear arsenal.

Since the dramatic September 11 terrorist attacks, the public's overwhelming attention to security has resulted in considerable research on the threats of the new strategic era. The debate that followed the Bush administration's 2001 NPR offered hope that recognition of the new challenges would include a discussion on adapting the country's nuclear posture. Indeed, the controversy surrounding the NPR produced a remarkable increase in the volume of literature on the mission of nuclear weapons. Still, some experts commented that the profound implications of the NPR's plans amounted to a "quiet revolution" in the nuclear strategy of the United States, but the level of public debate does not reflect such a change.<sup>48</sup> In fact, the controversy following the NPR focused on a somewhat narrow set of implications, for example, how robust nuclear earth penetrators might affect proliferation, the nuclear testing moratorium, and the nuclear threshold.

The literature would have benefited from addressing in greater depth the issue underlying the proposals contained in the NPR: the effectiveness of nuclear deterrence hinges on the credibility of the retaliatory threat, an aspect that poses an obvious problem in today's context. Is the U.S. nuclear posture still credible in the eyes of adversaries that are diverse, quickly evolving, and at times poorly understood? Further research should consider more closely the following related questions:

---

47. Steering Committee for the Project on Eliminating Weapons of Mass Destruction, *An Evolving U.S. Nuclear Posture* (Washington, D.C.: Henry L. Stimson Center, December 1995), reprinted in *The Washington Quarterly* 20, no. 3 (Summer 1997): 163–166; Campbell, Einhorn, and Reiss, *The Nuclear Tipping Point*. See Mitchell Reiss, *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities* (Washington, D.C.: Woodrow Wilson Center Special Studies, 1995); Mitchell Reiss, *Without the Bomb: The Politics of Nuclear Nonproliferation* (New York: Columbia University Press, 1988).

48. Russell and Wirtz, "A Quiet Revolution."

- How should the United States preserve credibility when adversaries and targets are unknown? As discussed earlier, the terrorist threat is difficult to deter because the United States so far has proven unable to find high-value targets to hold at risk. In this context, how can nuclear threats be adapted to the terrorists' calculus?
- Are the conduct and direction of current conflicts contributing to the erosion of credibility? Recent conflicts have demonstrated the devastating potential of U.S. conventional capabilities, as well as the U.S. willingness to use these weapons. Furthermore, the use of intelligence and special forces are gaining more attention at a time when asymmetric warfare and stability operations are overwhelming preoccupations. In this context, will nuclear capabilities seem increasingly unusable?
- Would the United States be more credible if equipped with an understanding of where the U.S. public stands on the use of nuclear weapons? For example, are nuclear weapons perceived as an immoral anachronism, or has the threat of a devastating WMD attack made them more valuable since September 11? In what scenarios might the public accept or even demand a nuclear strike?

Answering such questions may help determine the importance of investing future resources in nuclear capabilities. Indeed, because most of the existing U.S. force was developed and built in the 1970s and 1980s, significant resources will be necessary to maintain a state-of-the-art nuclear arsenal in the near future. Components are aging, and the end of testing means the loss of nuclear knowledge.<sup>49</sup> The stakes of the nuclear debate are high; the level of public support for the cost of maintaining and modernizing the massive U.S. nuclear stockpile and its supporting infrastructure will depend on what citizens believe to be the importance of nuclear weapons to the nation's security. It is therefore increasingly urgent to engage in an honest and informed national debate on the contributions and limitations of nuclear weapons in today's world. It is up to researchers to help inform and advance this debate.

---

49. For views on nuclear stockpile stewardship, see John Harvey, "Update on U.S. Nuclear Weapons Policy Issues" (remarks, Carnegie International Nonproliferation Conference, Washington, D.C., June 22, 2004); Christopher Paine, "Coddling the Nuclear Weapons Complex," *Arms Control Today*, May 2004, [http://www.armscontrol.org/act/2004\\_05/Paine.asp](http://www.armscontrol.org/act/2004_05/Paine.asp) (accessed October 8, 2004); Buchan et al., *Future Roles for U.S. Nuclear Weapons*, pp. 109–111; Stephen M. Younger, *Nuclear Weapons in the Twenty-First Century* (Albuquerque, N.M.: Los Alamos National Laboratory, June 27, 2000), p. 3.

