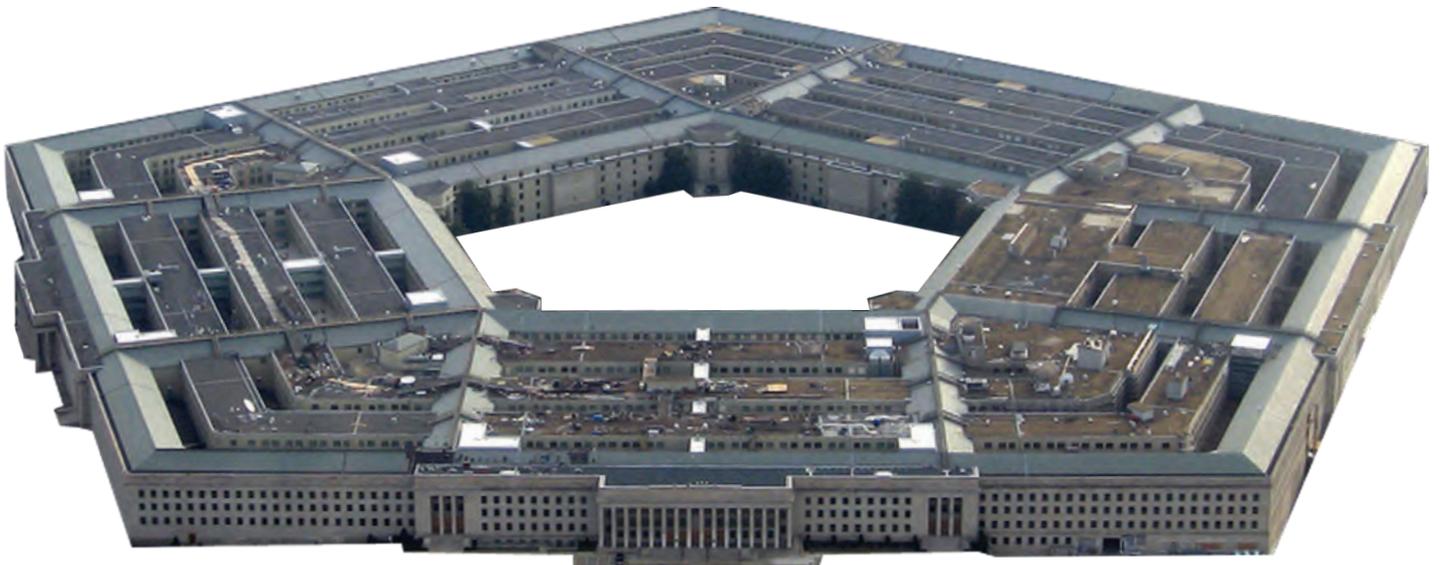


Facilitating a Dialogue among Senior-Level DoD Officials on National Security Priorities: A Methodological Note

A Beyond Goldwater-Nichols Phase 4 Report



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April 2008

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FACILITATING A DIALOGUE AMONG SENIOR-LEVEL DOD OFFICIALS ON NATIONAL SECURITY PRIORITIES: A METHODOLOGICAL NOTE

Clark A. Murdock, Project Co-Director

In the spring and early summer of 2006, the Beyond Goldwater-Nichols (BG-N) project leader (Clark Murdock, a senior adviser at the Center for Strategic and International Studies) reviewed a proposal for the proposed Phase 4 issue agenda with his “task monitors” in the Office of the Secretary of Defense (OSD).¹ The proposed studies on governance in the Department of Defense (DoD), on DoD and the nuclear mission, and on the response by DoD and the U.S. government (USG) to domestic catastrophes were readily accepted by OSD,² but one of the senior OSD officials suggested another task. He noted that although the 2005 Quadrennial Defense Review (QDR) had included a very illuminating discussion among DoD senior officials on U.S. national security issues, in their “senior-level discussions” they had failed to reach a consensus on what their collective national security priorities were.³ The BG-N study team readily agreed to develop a one-off experimental methodology for facilitating a dialogue on national security priorities among senior-level DoD officials (with some USG-wide participation) in an effort to provide front-end guidance to the 2009 QDR.⁴

¹ The multi-year BG-N study started in November 2003 when CSIS received its first tranche of funding from the Smith-Richardson Foundation. With most of its subsequent funding provided by the U.S. Congress (in the FY05, FY06 and FY07 defense appropriations bills), the Beyond Goldwater-Nichols series has yielded the following reports and papers:

- Phase 1 report (March 2004) on DOD reform (including chapters on congressional and interagency reform).
- Phase 2 report (July 2005) on DOD (7 chapters) and USG (4 chapters) reform.
- Phase 3 report (July 2006) on the Role of the National Guard and Reserves and an annotated brief (August 2006) on DOD acquisition and PPBES reform.
- Phase 4 reports (in addition to this report) on DOD Governance (March 2008), DoD and the Nuclear Mission (February 2008) and DoD/USG Response to Domestic Catastrophic Disasters (March 2008).

² Support for this BG-N Phase 4 study effort was also provided by the Department of Homeland Security (DHS) and the U.S. Coast Guard (USCG).

³ A participant in those discussions, however, noted (in a private e-mail on February 28, 2008) that the meetings “gave legitimacy to the agenda that OSD Policy was asserting” [that is, addressing the “four core problems” of defeating terrorist networks, defending the homeland in depth, shaping the choice of countries at strategic crossroads and preventing the acquisition or use of weapons of mass destruction] and that the “sessions had served as agenda setting exercises.” “There was a great deal of discussion going into the meetings on what the focus of the QDR should be; there was relatively little discussion coming out of the meetings.”

⁴ In *Innovating Defense Governance: A Beyond Goldwater-Nichols Phase 4 Report*, Kathleen M. Hicks states:

A clear, prioritized agenda for the secretary must result from this first quarterly meeting [in a new administration’s first year in office]—if it does not already exist—in order for the decision-execution assessment system to fully realize the secretary’s strategic priorities. Yet, effective means for identifying and prioritizing key priorities has largely eluded senior officials. The BG-N 4 study team is developing a one-day, senior-leadership approach that seeks to fill this “front-end guidance.” CSIS plans to test its

The Evolution of the Methodological Approach

The BG-N study teams' methodological approach for facilitating a senior-level dialogue on national security priorities are grounded in the author's experience in almost three decades of advising, assisting, or planning for top-level officials in the Office of Secretary of Defense, the CIA, the National Security Council, the House Armed Services Committee, and the Air Force. It is the author's firm conviction that focusing senior-level discussion only on the strategic priorities themselves is interesting and often informative, particularly as it elucidates the views of key participants, but rarely conclusive, because senior-level officials lack the time, motivation, or patience to continue the discussion until they have reached agreement on how they collectively order (or "prioritize") their strategic concerns. If there is no compelling reason to make trade-offs between competing priorities, senior decisionmakers tend to avoid those choices, because they are difficult, particularly when they must be collectively made. Senior-level officials will make the effort only if they must as a means to solving a problem; if merely faced with an "academic exercise," they won't. In other words, some mechanism is needed to force senior-level officials to reveal their true preferences.

Over the past 15 years, the author has found that if senior officials are asked which kind of "military," defined as blocks of capabilities, they would choose in a certain context, they will engage in a serious discussion about priorities as they make that decision. Giving them something real to decide—namely, which "stack of capabilities" the senior-level officials prefer—has been effective in several instances:

- In 1992, key members of the House Democratic Caucus chose House Armed Services Committee Chairman's Les Aspin's Option C—a less costly version of the Base Force consisting of a Desert Storm equivalent, a Just Cause equivalent, and so on—rather than the less expensive, less capable Option B being promulgated by House Budget Committee Chairman Leon Panetta.
- In a September 1996 "Corona" (a high-level senior leadership meeting in which the Air Force four-stars and top civilian officials meet three times a year for two to three days), the author used an Alternative Air Force tool (which portrayed future air forces as different aggregations of future capabilities that had been costed out and rated for operational effectiveness) to illustrate the implications of the decisions made at the "long-range planning Corona."
- In the November 1999 Corona, the senior leadership of the Air Force debated "alternative Air Forces," expressed as alternative mixes of cost-constrained weapons programs, and chose Option 4B as their "Vision Force."
- In spring/summer 2001, the author used an "alternative militaries" approach—which graded the military services modernization plans as to whether their programs were legacy, transitional, or transformational—to demonstrate the trade-offs between alternative modernization strategies.⁵
- In summer 2004, capability building blocks for Win Decisively and Swiftly Defeat were developed and used in a workshop to build a force-shaping and -sizing construct (FSSC) to replace the 2001 QDR's "1-4-2-1" force-sizing construct, which tasked DoD to defend the

proposed prioritization approach in spring 2008, using former senior defense officials as participants. Regardless of the outcome of the CSIS experiment [the subject of this report], the first quarterly meeting should conclude with the secretary and his team of senior-level officials understanding what their key priorities are. (26)

⁵ Unpublished briefing by Clark Murdock (July 2001), "Making Strategic Choices: The Alternative Military Approach."

homeland (“1”), deploy to and from four critical regions (“4”), swiftly defeat two aggressions (“2”), and win decisively in one of those conflicts (“1”).⁶

In each instance, the participants implicitly revealed how they “prioritized” the national security environment by the choices they made as they decided how much (force sizing) of what kinds (force shaping) of capabilities they wanted to deal with the current and future security challenges.

Although the BG-N study team⁷ started the study effort in October 2006, work proceeded at a fairly modest pace and it took almost a year for the CSIS methodological approach to evolve. As stated in a November 7, 2006 brief (as amended during the internal study group discussion), the BG-N study team envisioned a five-step methodological approach:

1. Assess the nature of the future security environment.
2. Identify key U.S. and DoD missions (~2015–30).
3. Develop force capability options.
4. Assess options in terms of risk.
5. Provide front-end guidance to the QDR.

Work on the methodology accelerated during January 2007 and, after several internal working group meetings, resulted in the “working” methodology described below.⁸

Purpose

- To develop an approach for facilitating a strategic dialogue among senior-level decisionmakers on 21st-century defense priorities that results in front-end guidance to the next QDR.
 - Conceptualized very much at the big picture level; attempts to move the discussion from national security priorities to defense priorities to illustrative defense postures and then back again to a prioritization of defense priorities as front-end guidance.

Approach (a set of sequential steps)

- Paint the international and domestic security landscape in all its diversity with an emphasis on the impressionistic, not deterministic (in its futures report, *Global Trends*, the National Intelligence Council tells us what is likely to be most important; here, the decisionmakers decide from a non-tiered “world” of key mission areas).
 - An extensive set of charts that details by known trends, threats, wild cards, policymaking context, and so on—everything that constitutes today’s and tomorrow’s security environment. These go into the appendix. (We refer to these as “canvases” or “posters,” consonant with our metaphor of “painting” the national security landscape.)

⁶ Prepared for OSD Strategy by Center for Strategic and Budgetary Assessments and Murdock Associates, Inc. (September 2004), a Workshop Final Report on “Building a New Force-Shaping and Sizing Construct.” Contract No: DASW01-02-011400024.

⁷ Initially, most of the Task 1 work (on setting national security priorities) was done by Clark Murdock; Jim Miller, then at Hicks and Associates, Inc., (an SAIC subsidiary), and Michèle Flournoy, then resident as a senior adviser at CSIS.

⁸ Clark Murdock (February 12, 2007), “Proposed Approach for a Senior-Level Dialogue on National Security Priorities.” Quote text is abstracted and corrected for typos.

during October–January 2007) for the BG-N team members to present their latest iteration, get feedback from the group (particularly the project director and the two or three “external” experts, when they attended), and plan the next steps. On January 9, 2008, the entire methodology was presented to an expanded group of “external” experts (primarily CSIS senior professionals and Military Fellows). At this session, the participants largely agreed with the project director’s assessment that the first part of the methodology had worked quite well, but the second part had not.

As the first step in applying the methodology, the project director drafted a “hierarchy of missions & capabilities” that would portray the “cascading” relationships between the nature of the security environment (the demand side of the equation) to the elements of military capability (the supply side). The BG-N study team used the following February 24, 2007, version as its working structure.

21st-Century Security Environment

The world in which senior national security decisionmakers operate

- Known Trends
 - Demographics, globalization, omnipresent media, etc.
- Challenges, Threats, and Opportunities
 - Resource scarcities, non-state actors, another Green Revolution, etc.
- Wild Cards
 - The day after nuclear use, another Chernobyl, pandemic, etc.

Key National Security Objectives (as defined in February 2007)

What they are trying to achieve

- Homeland Security/Defense
- Long War against Islamic Extremists
- Combating Weapons of Mass Destruction
- Protecting U.S. Interests and Allies
- Promoting Economic, Energy, Environmental, and Education (E4) Security
- Promoting Human Rights, Democracy, and Justice

Critical National Security Missions

The USG ways in which they pursue these ends

- Diplomacy, Shaping, and Deterrence
- Full-Spectrum Expeditionary Operations
- Intelligence (foreign and domestic)
- Economic, Legal, and Governance Support and Assistance

Military Capability Areas

*The military means at their disposal*¹⁰

- Major Combat Operations
 - OIF, OEF, North Korea, etc.
- Small-Scale Combat Operations
 - GPS, Direct Action (CT), NEOs, etc.
- Stability Operations
 - Iraq, Afghanistan, Kosovo, etc.
- Military Intelligence
 - Operational and Tactical Support to JFC
- Force Projection and Sustainment
 - Mobility and Logistics

Military Force Structure Elements

*The components of military capabilities*¹¹

- Land Forces
 - Marines are land forces that operate in the littorals
- Maritime Forces
- Air Forces
- Space Forces
- Cyberspace Forces
 - Includes last two “Cs” of C⁴: communications & computers
- Special Operations Forces (SOF)
 - Composed of elements from all five domains but uniquely trained and equipped for special missions
- Intelligence
 - Surveillance and reconnaissance are both missions performed by intelligence, and distinctions between them are blurring in an age of persistent surveillance
- Mobility & Logistics Forces
 - Integrated to ensure trade-offs across
- Nuclear and National Missile Defense Forces
 - Unique weapons and an extremely demanding mission

¹⁰ Capability defined as the ability to execute a **mission** (broken down into its component **tasks**), under specified **conditions**, against specified **adversaries**, with specified **partners**, and to specified **standards**. Capability area assessments measure how well (from a capability and capacity perspective) current or future forces do the job (that is, execute the mission to a specific performance standard).

¹¹ These are the “force units”—primary units of personnel and their associated equipment—that conduct military operations (the efficacy of which are assessed by capability area). The categories listed here include combat, combat support, and combat services support forces. They do not include those “Institutional Support” activities DOD must engage in as it provides forces (of varying types and quantities) to the combatant commanders and their joint force commanders. This taxonomy could be used as a new Major Force Program (MFP) structure, which could be adopted, along with a streamlined and realigned universe of program elements or PEs (there are now over 5,000 active PEs and another 1,000 in the inactive FYDP database).

The challenge, of course, was to apply this construct in a manner that was both credible to senior-level decision makers and “user-friendly.”

*Painting the 21st-Century Security Landscape.*¹² The analytic challenge for this team was to collapse the first three elements of the missions and capabilities hierarchy—that is, the security environment, key national security objectives, and critical national security missions—into a visually compelling format intended to get senior-level decisionmakers “out of their inboxes” (which focus them on handling today’s urgent “hot spots”) and into a broader, longer-term, more reflective “space” for thinking through the full range of security challenges facing the nation. The set of critical national security missions, which is an adaptation of the diplomacy-informational-military-economic (DIME) formulation for the elements of national power, conforms to the “ends-ways-means” construct favored by many military strategists, but it proved to be of little use, because these three categories were so broad that it was hard to relate them to both key national security objectives and military capability areas. In effect, they were dropped from the hierarchy as the task became linking key national security objectives to military capability areas.

Once the decision had been made to capture the challenges of the environment through the lens of key national security objectives, the debate among BG-N members turned principally to how many key objectives there should be and how best to express them. In the final version (see Appendix A), the BG-N team agreed to five key national security objectives, but the path to those five (and finding the words used to describe them) was not straightforward:

- “Protecting U.S. Interests and Allies” (in the 2/24/07 version) evolved into “Maintain Global and Regional Stability.” The initial version, of course, raised questions of protecting what interests against what threats. Since the other key national security objectives also capture important U.S. interests (e.g., defending the homeland), the focus here was on stability, which is of interest to the United States as a status quo power with both global and regional roles and interests. The chart for this objective (see Appendix A, p. 14) also addresses the increasing multipolar nature of the 21st-century international system (with its great powers, U.S. allies and partners, potential U.S. adversaries, and nonaligned countries).
- “Homeland Security/Defense” became “Providing Homeland Security” to underscore the USG-wide nature of both the mission and capability providers. It also reflected the belief of the project director that (1) the American people are interested in their physical security, broadly defined, not just the defense of their borders, and (2) DoD, particularly under Secretary of Defense Donald H. Rumsfeld, had used the “homeland defense” construct as a means of limiting the capabilities the Department would make available for the homeland security mission.
- The internal debate that led the “Long War against Islamic Extremists” to become the “Struggle against Radical Extremists” was intense and often passionate. BG-N study group members readily agreed that the “war” construct for the generations-long conflict was too limiting, since many nonmilitary instruments are used. Although the phrase “Islamic extremists” is widely used by the American media, academic and subject matter experts (SMEs) associate “Islamic” with religious and cultural issues and “Islamist” with political movements (albeit ones derived from

¹² CSIS Fellow Sam Brannen started participating in this effort in September 2007 and within a month was coordinating/directing the mini-team producing the charts and texts associated with this effort. Cassandra Smith, an intern for Stephen Flanagan, CSIS vice president and director of the International Security Program, joined the effort in October 2007.

Islamic religious beliefs). After much debate, the BG-N study team adopted “Islamists” because Americans using “Islamic” are widely perceived in the Muslim world as being against Islam. The decision to use “radical” (to connote those willing to use terrorism in support of their Islamist goals, even though some radical Islamists embrace nonviolence) as opposed to “violent” (since some Muslims, particularly disaffected youths, may embrace violence for essentially nihilist, not religious, motives) as the descriptor for “Islamists” was a close call. Most BG-N study group members would probably find both “radical Islamists” and “violent Islamists” acceptable.

- The least controversial evolution was that from “Combating Weapons of Mass Destruction” to “Mitigate Proliferation Threats” as shorthand for “prevent the develop, acquisition, trafficking, and use of nuclear, chemical, biological, and radiological weapons and materials.” This is how the mission is generally characterized in USG and DoD strategy documents, a characterization that the BG-N study team found both widely used and perfectly acceptable.
- Finally, the collapse of “Promoting Economic, Energy, Environmental and Education (E4) Security” and “Promoting Human Rights, Democracy and Justice” into “Provide E3 Security and Human Rights” primarily reflected the scaling back of the BG-N study team’s characterization of the aspirational nature of U.S. national security objectives. Adding economic, energy, and environmental security seemed warranted in view of how Americans increasingly define security in an era of globalization and global warming; but education, which may be the most important means for individuals to attain E3 security, was probably a step beyond how Washington defines “national security.” American foreign policy has always been a blend of what we label Kissingerian realism and Wilsonian idealism, but the current administration’s “American realism” has elevated the importance of promoting the American values of freedom and democracy and caused many, particularly among international audiences, to question whether freedom is more important than justice and to argue that democracy must be grounded on other conditions (rule of law, free press, existence of a middle class, etc.) to ensure that democratic elections do not produce nondemocratic results. The BG-N study team decided to focus on human rights, which are universally accepted (as enshrined in the UN Universal Declaration of Human Rights), and to eschew the more proactive promotion of American values. The decision to collapse E3 security and promoting human rights into one chart was made relatively late in the process (December 2007), and was not unaffected by considerations of time (the January 12, 2008, presentation was looming) and imagination (the challenges of visually presenting the nation’s pursuit of values).

After engaging in this extended debate over how to define U.S. key national security objectives, the BG-N study group decided on the following:

- Maintain Global and Regional Stability: Ensure Stability, Security, and Economic Prosperity in an Era of Globalization
- Provide Homeland Security: Provide Active, Layered Defense with Readiness to Support Incident Management
- Mitigate Proliferation Threats: Prevent the Development, Acquisition, Trafficking, and Use of Nuclear, Chemical, Biological, and Radiological Weapons and Materials
- Prevail in the Struggle against Radical Islamists: A Multidimensional Campaign against the Globalizing Islamist Insurgency and Religious Terrorism
- Promote E3 Security and Human Rights: Promote Economic, Environmental, and Energy Security, as Well as Good Governance, Internal Stability, and Human Rights

This taxonomy was then used as the structure for “painting the national security leadership” on five separate “canvases” (see Appendix 1). The above description of how the BG-N study teams came to this definition is provided so that those using this methodology can understand why the BG-N study team made the analytic judgments that it did. It also demonstrates how potential users of the methodology can easily adapt the definitions to reflect their needs and judgments.

Sam Brannen’s overview of how the BG-N study team “painted” the national security landscape (see pp. 14–16) vividly captures the three-part approach that BG-N study team used for each key national security objective:

1. Poster (“Canvas”)
 - A visual depiction, done in an impressionistic manner, of the many, complex elements of the security environment that affect how the United States achieves a particular national security objective.
2. Script
 - A two- to three-page set of talking points that explains the visual layout of the poster and concludes with three critical challenges to achieve that national security objective (the latter is optional).
3. Essay
 - A substantial paper (complete with references) that provides the substantive basic for the poster and provides enough information to those who use the methodology to create a different poster than the one provided by the BG-N study team.

As posters depicting the security landscape matured and were tested with “external” participants, the BG-N study team learned that an additional poster was needed that captured the security challenges that were preoccupying the senior-level officials at the very moment they were participating in the exercise. It is characterized as “The National Security Inbox” (see pp. 17-20 for the poster and script), and the discussion leader (the senior member of the analytic support team or a professional facilitator) begins the exercise by putting the Inbox chart before each decisionmaker as a XX by YY placemat and saying: “We know this is what you are dealing with right now and we understand how compelling it is. But for the next X hours (ideally, at least three), we want you to lift your sight from your inbox and look more broadly at all of the key security challenges facing the United States, both now and into the future.” The discussion leader then turns to the security landscape posters and starts describing each of the five security challenges according to the scripts provided. It was the collective judgment of the participants in the January 12, 2008, meeting that the using the five security landscape posters would work well in getting the heads of senior officials out of their inboxes and into the broader security environment, and everyone genuinely liked the Inbox chart and enthusiastically endorsed its utility.

Assessing Alternative U.S. Military Postures. Developing an “alternative militaries” methodology that is credible and easy for senior-level officials to use is a daunting challenge. The intent is to facilitate a discussion in which the participants debate which “stacks of capabilities” they prefer to employ in dealing a range of security challenges. If a senior official starts questioning the methodology—for example, the taxonomy or “binning categories” of capabilities, the assignment of specific capabilities or forces to a specific category, the scoring or ratings (on effectiveness) evaluating how well a specific capability performs, the costing of capabilities, and so on—the exercise will fail, because senior officials find it

easier to reject the methodology than to make hard choices between desired capabilities. “Fighting the methodology” is much the same as having players in a war game “fight the scenario,” because the exercise or game participants are attacking the exercise itself rather than suspending disbelief and playing the game as its designers intended. It has been the author’s experience that the resistance to “alternative military” methodologies is particularly high, because many senior-level officials are not comfortable with quantitative approaches (capabilities expressed as numbers of units, people, and equipment and costs expressed in dollars) in general, much less with quantitative approaches intended to force them to make cost-constrained choices that are inherently difficult.

In addition to the problem of cultural resistance, the analytic challenge of moving from “military force structure elements”—the real increments in which DoD actually “buys” capabilities (Army brigades, Navy ships, Air Force wings, Marine battalions, etc.)—to “military capability areas” (defined as types of operations such as major combat operations, small-scale operations, and stability operations) is difficult, because the same unit of capability (e.g., an Army squadron) can perform many different types of operations. There’s a reason why much of the military force structure is categorized as General Purpose Forces (GPF): they can carry many types of operations and, further complicating matters, they can execute a broad range of missions, ranging from disaster relief to stability operations to major combat operations. Previously, the author had used the alternative militaries approach to address relatively constrained issues—for example, balancing investments in legacy, transitional, or transformational weapons systems or deciding the optimum mix of Air Force weapons system under a fixed budget ceiling. In this instance, however, the BG-N study team was trying to express the entire U.S. military forces structure as a set of “capability blocks” that could be “racked and stacked” by the participants in different ways that reflected their real strategic priorities.

Utilizing FY 2006 force structure and budget data, Richard Weitz (at the direction of the project director) experimented with many different ways of categorizing military force structure elements and ended up using the following structure at the January 12, 2008, sessions (see p. 128 in Appendix B):

- *Contingency-based* capability blocks
 1. Major Combat
 2. Post-Conflict
 3. Domestic Defense
 4. Small-Scale Deployment
- *Force-enabling* capability blocks
 1. Mobility and Logistics (such as air and maritime transportation and supply assets)
 2. Command, Control, Communication, Intelligence, Surveillance, and Reconnaissance (C³ISR)
 3. Science and Technology (S&T) Programs
 4. Infrastructure (institutional support activities)

Session participants immediately took issue with how specific force elements were assigned (e.g., 18 National Guard infantry brigades to domestic defense or 7 Stryker brigades to post-conflict operations). The problem, of course, was that an infantry brigade could be used for all four of the contingencies (even though they might be better trained and equipped for some operations than others), so there was no uncontroversial way of assigning forces either in the Baseline case (how the current force is characterized) or in alternatives to the Baseline Force (in this instance, forces optimized for great power

competition, counter-WMD activities, counterterrorism, and homeland security). Several participants suggested that the BG-N study team revert to traditional approaches that characterized units as General Purpose Forces (with land, maritime, and air subcomponents), Special Operations Forces, and so on. Despite prodigious amounts of painstaking work by Richard Weitz, the project director could not develop an approach that was credible to “external” participants; and since the credibility issue was never solved, the question of how “user-friendly” the methodology was for senior-level officials was never addressed. In this instance, the alternative military approach simply did not work.

Toward a Less Ambitious but Still Useful Methodology

As stated, the purpose of this exercise is to facilitate a strategic dialogue among senior-level decisionmakers on 21st-century defense priorities that results in front-end guidance to the next QDR. In keeping with the axiom that one should build on success, the BG-N study team recommends that potential users of this methodology adopt the Painting the Security Landscape approach, which relies on a discussion leader to first “ground” the senior-level participants in their National Security Inbox and then to “elevate” their perspective by walking them through the five Security Landscape posters.¹³ The ensuing discussion of the security posters themselves should be fairly short (20–30 minutes) and is intended “to get the heads” of the participants into the 21st-century national security environment.

At this point, the discussion leaders remind the senior-level participants that the purpose of this exercise is to provide front-end guidance to the QDR by providing more detailed, yet still authoritative, information about the strategic priorities of the Secretary of Defense and his or her top team. To produce this guidance, the discussion leader should then implement a methodology that consists of the following steps:

1. Proposed Criteria for Assessing the Current and Future Force

The assessment categories used on January 12, 2008, by the BG-N study team consisted of the following:

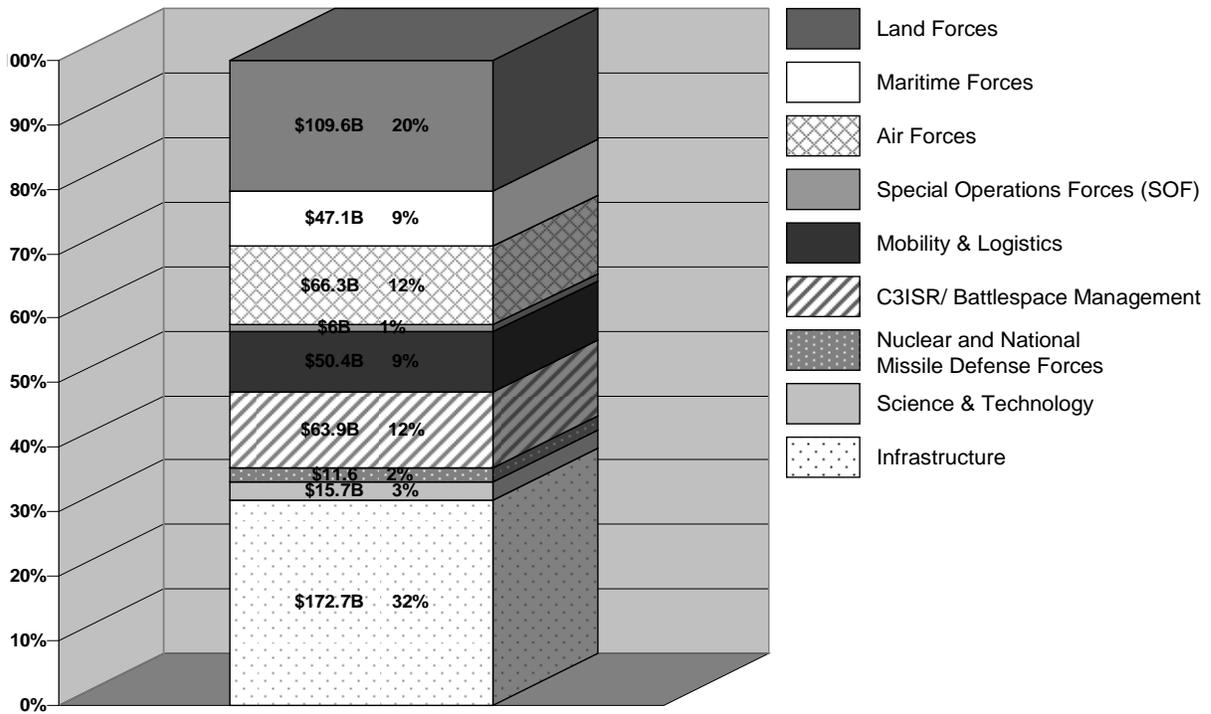
- Great Power Competition
- Counter-CBRN
- Counterterrorism
- Homeland Security
- Steady-State v. Surge Capacity
- Investment for Future Challenges

The participants are then invited to discuss whether these are the right assessment criteria, and they are amended as necessary.

¹³ Although the BG-N team used the author of each poster’s content—much of the design work on all of the posters was done by John Burgeson—to present the script for that poster, using five or six different presenters gave the opening presentations an uneven, “herky-jerky” atmosphere. It would have been far better for the BG-N study team to have used the discussion leader or one seasoned facilitator to present the scripts for the posters and have had the SMEs available to answer any questions.

2. The Baseline Force

As was done on January 12, 2008 (see p. 11), the Baseline Force is captured as a “stack of forces” (not capabilities) using traditional force structure categories.



Land Force

- 70 Army force application brigades
- 13 Army fires brigades
- 7 Army Stryker brigade combat teams
- 4 Marine divisions

Air Force

- 9 Bomber squadrons
- 84 Fighter squadrons
- 38 USN attack squadrons
- 25 USMC air combat squadrons

Maritime Forces

- 279 Ship battle forces including 11 Carriers, 4 SSGNs, and 53 SSNs

Special Operations Forces

- 5 USA active special forces groups
- 1 Ranger regiment
- 1 Marine special operations regiment

Special Operations Forces (contd...)

- 3 Psyops groups
- 3 CA unconventional warfare groups
- 8 Seal teams

Mobility & Logistics

- 16 Refueler squadrons
- 19 Airlift squadrons
- 64 USA logistics units
- 142 Support and logistics ships

C3ISR

- 14 USAF Squadrons
- 520 UAVs

Nuclear and National Missile Defense Forces

- 500 ICBMs
- 14 SSBNs
- 24 Ground based interceptors
- 3 X-band radars

3. **One Expert’s Assessment of the Baseline Force’s Capabilities**

A well-respected, independent expert provides his or her assessment, according to the criteria established in Step 1, of how well the Baseline Force copes with the challenges outlined in the five Security Landscape Charts.

- The assessment should be high-level (perhaps red-yellow-green stoplight charts) and intended to demonstrate to the senior-level participants the kind of assessments they should be making of how well the Baseline Force would perform across the range of security challenges.
- The independent, high-level expert should provide his or her rationale for the assessments but avoid any extended debate over them.

4. **The Group Assesses the Baseline Force’s Capabilities**

The discussion leader then asks the group to discuss how they would assess the Baseline Force according to the Step 1 criteria. The intent is not to compel a consensus on the overall assessment (although one is likely to emerge on some of the criteria), but to get participants used to thinking about the pros and cons of the Baseline Force along the set of capability criteria.

5. **The Group Discusses “Puts” and “Takes” to the Current Force**

The discussion leader poses two questions: What kinds of capabilities do you want more of? Which capabilities can you afford to have less of?

- Again, the intent is not to force a consensus, although a strong-minded and persuasive participant might be able to win one in support of his or her preferences. The real intent is to get the senior-level team debating on how the Baseline Force could be changed to increase its ability to cope with the challenges of the 21st-century security environment.

6. **The Secretary Issues Front-End Guidance on His or Her Strategic Priorities**

Ideally, the Secretary should participate in this discussion, since experiential learning generally has stronger and longer-lasting effects. At a minimum, the Secretary should be briefed in detail on how his or her top team addressed these issues. In consultation with a few close advisers and with independent input, of course, from the Chairman of the Joint Chiefs of Staff (who may have joined the Secretary in this exercise), the Secretary provides front-end guidance on how to adapt the “as-is” force so that it is more capable of dealing with the challenges of the 21st-century security environment.

While this methodological approach is less analytically sophisticated than the alternative military approach, it makes greater demands on the leadership abilities of the Secretary of Defense. In this approach, the Secretary may engage in a collective discussion, but it is the Secretary’s priorities that provide front-end guidance. Calling the six-step process outlined above a “methodology” is probably an overstatement. It’s really a process for having a *disciplined discussion* on aligning DoD capabilities against current and future security challenges. It is meant to inform a Secretary’s decision on what those priorities should be. If a Secretary is unable or unwilling to make those decisions, however, the discussion will be interesting and illuminating to the participants but will have little real impact. But that is true as well of a more sophisticated methodology like the alternative military approach, which, if credible, can provide a stronger rationale or analytic “top cover” for whatever guidance is provided by a Secretary. In the final analysis, that guidance is determined by the Secretary, not by the methodology.

OVERVIEW: PAINTING THE NATIONAL SECURITY LANDSCAPE

Samuel J. Brannen, Project Co-Director

From precisely the same physical viewpoint over a span of decades, the French impressionist master Claude Monet painted the Rouen Cathedral dozens of times. Each time he produced a strikingly different result. Sometimes Monet captured the morning light, at other times the evening; sometimes he painted in the flat light of winter, then the vibrant light of spring. Despite the static nature of this high Gothic architectural object, the world changed around it and so did the painter's eye. The paintings—formed from dozens of loose, thick brushstrokes and splashes of color on the canvas to capture the light—could never be used as a blueprint to reconstruct the cathedral. The power and allure of Monet's painting, and impressionism generally, lie in the feeling it evokes of the subject matter under different conditions. To an impressionist, the light and atmosphere are always changing. At each moment, the world appears slightly different; and over time, it can appear radically transformed.

Our task was to paint the national security landscape. After setting up our easel—our vantage point being a U.S. perspective in 2008—we squinted into the distance and out to the 2015–30 time frame. Then we picked up the brush and started to paint. Like Monet, we did not worry about the tiny details. Rather, we sought to capture the broad contours of what is on the horizon. As we painted, the light changed. Areas we initially had not noticed became clearer. The seasons changed, and at times the very landscape seemed to take on a different feel. When we had captured all we could see and the work felt complete, we put down our brushes and stepped away from the canvas, having produced our impressions of a certain moment in time in a certain light, to be revisited again at a later date.

We painted five distinct scenes. Working with a range of experts who together have decades of experience in government, reviewing as much literature as possible, we have identified five key missions that we believe national security planners must focus on as they develop the range of interagency national security capabilities that will enable the United States in the decades ahead to make proactive and not merely reactive policy decisions. These are core missions of national security—not optional or alternative strategies to pursue. None is discrete; they are overlapping and interconnected features of the landscape.

- Maintain Global and Regional Stability: Ensure Stability, Security, and Economic Prosperity in an Era of Globalization
- Provide Homeland Security: Provide Active, Layered Defense with Readiness to Support Incident Management
- Mitigate Proliferation Threats: Prevent the Development, Acquisition, Trafficking, and Use of Nuclear, Chemical, Biological, and Radiological Weapons and Materials
- Prevail in the Struggle against Radical Islamists: A Multidimensional Campaign against the Globalizing Islamist Insurgency and Religious Terrorism
- Promote E3 Security and Human Rights: Promote Economic, Environmental, and Energy Security, as Well as Good Governance, Internal Stability, and Human Rights

In each key mission area, it is ever more clear that the United States is not the sole determiner of outcomes. As the world becomes increasingly multipolar, the United States' relative influence on events is diluted. The utility and nature of alliances are shifting. Yet U.S. thinking remains captive to the paradigm conceived when a bipolar world gave way to a moment of unipolarity. In stark contrast, the world out to 2030 is defined by the rise of new or reinstated global powers, the lack of interstate warfare, the rise of non-state actors (both malevolent and benevolent), and the power of hydrocarbon-rich states. This is a world of choice and contestation. There is unprecedented choice for countries and individuals between economic centers of gravity, choice between Hollywood and Bollywood movies, choice between McDonald's and kebabs. Simultaneously, there is growing contestation between those who recognize and promote the benefits of globalization and those who feel they have been left behind by it, or who oppose its apparent outcomes. There is also a growing contest over how choices are made by or on behalf of individual global citizens, who will number 8.3 billion in 2030.

The challenge of homeland security is a logical outgrowth of global interconnectedness, and it is far from resolved. Homeland security's core task is to overcome the artificial dichotomy of domestic and international security imposed by existing legal regimes and bureaucratic structures. "Homeland security" is a nebulous, catch-all term that encompasses anything that might happen in the United States. It knits together government at local, state, and federal levels—a range of unwieldy federal departments and agencies—along with the private sector and private citizens. High-probability homeland security events include natural disasters and homegrown terrorism involving improvised explosive devices (IEDs). Events that cannot be ignored include the catastrophic use of chemical, biological, radiological, and nuclear (CBRN) weapons in a world of networked terrorism powered by information technology. It is impossible to say whether the four failures identified by the 9/11 Commission report—failures in imagination, policy, capabilities, and management—have been corrected.

The international community is entering a new age of proliferation, and the implications of that reality for the homeland and for global and regional stability cause overwhelming concern. After decades of CBRN reduction, proliferation is set to spin out of control, more dangerously than ever before. Non-state actors on their own accord are pursuing CBRN. States with clear links to non-state actors are seeking or already have nuclear weapons, triggering regional instability and further proliferation. International regimes and institutions are failing to intervene, or are ineffective in their efforts.

The United States is at war with radical Islamists, from al Qaeda to Hezbollah. Terrorism defines the international security landscape as never before. On an unprecedented scale, terrorists have shown both will and ability to use violence in inflicting mass casualties, not just for theatrical effect but as a means of mass destruction that may be pursued to its grim conclusion. There is an ongoing, globalized insurgency of highly networked, highly decentralized groups fighting in a variety of theaters and sharing ideology, tactics, and resources. The war against this enemy is unquestionably about not attrition but an ongoing struggle for public perception and legitimacy. A reality of the current environment is that radical Islamism and its tactics are naturally drawn to conflicts wherever they arise.

At the same time, U.S. notions of national security and instruments of national power are changing. Some high-ranking U.S. officials have come to view foreign policy as overmilitarized, and serious thought is being given to new institutions and approaches for the 21st century. In this process, attention is shifting to nontraditional security areas, including the environment, energy, the global economy, human health, and human rights. Notions of security are moving from the international, state-

centric level to the community and even individual levels. Yet the danger posed by weak or failed states remains of pressing concern.

America is still the global leader, yet it is also the global scapegoat. It remains the most powerful state in the international system, and it is the essential partner that others increasingly do not want to acknowledge as such. Absent American leadership, critical issues affecting all countries—from climate change to energy security, from development to peace and stability—will fall by the wayside. Exercising that leadership is an increasingly complex endeavor requiring policy that takes into account the totality of the national security landscape.

The five national security “paintings” that follow this introduction are impressionistic. Each is accompanied by a script a presenter could use to explain how to interpret the painting’s main elements, as well as the key drivers and analytical findings that inform each national security challenge. The respective scripts are informed by a thoroughly researched background essay. Each of these essays was authored by the principal subject-matter expert (or experts) responsible for the overall composition of the related painting.

Before addressing these mission areas, consider the national security inbox pictured on the next page.* As my CSIS colleague Erik Peterson has often observed, long-term strategic planning is a luxury for those in government—or in any sector, for that matter. The morass of the short term is often inescapable, and the vision of policymakers is often reduced to the clutter of their in-boxes and the nonstop pressures of a 24-hour-a-day, 7-day-per-week news cycle. For the purposes of this exercise and for the sake of U.S. national security, leaders must learn to occasionally free themselves from this tyranny of the short term. They must look ahead to the changing international environment and focus on the need to ensure U.S. national security over the long term.

Note: For purposes of display and use in a national security priorities dialogue, the mission area posters should be printed for all participants in full color on paper of at least 17 x 11 inches (ANSI B, ledger/tabloid), as included in this report. High-quality, print-ready images are available for download at <http://www.csis.org/isp/bgn/dialogue/>. Adobe Photoshop format files are also available and are suitable for printing of up to 3 x 5 feet size. Please contact the CSIS International Security Program for more information, www.csis.org/isp.

* The inbox picture is accompanied by two scripts. One is a very brief bulleted list summarizing the items pictured on the desk. The other script is a more detailed analysis, for use by the presenter.

THE NATIONAL SECURITY INBOX



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NATIONAL SECURITY INBOX: EXISTING CHALLENGES

Inbox Realities

- Iraq remains the overriding priority.
- Combating terrorism globally (the struggle against radical Islamists) remains a significant challenge, with no neat conclusion in sight.
- Iran continues to pursue a military-use nuclear program.
- Concerns are growing about managing the rise of China and about its increased military spending and capabilities.
- The U.S. and NATO International Security Assistance Force (ISAF) missions in Afghanistan are stalemated.
- Military transformation is essentially on hold as the force is “rebalanced.”
- Energy security and climate change pose major problems.
- Questions are being raised about maintaining the national security and defense budgets as entitlement spending grows significantly.

NATIONAL SECURITY INBOX: EXISTING CHALLENGES

- The next President and Secretary of Defense will inherit a national security “in-box” with a range of challenges that could easily consume their entire focus, crowding out long-term strategic planning considerations.
 - When senior decisionmakers are not put into a position to think long-term and make choices, they move along as “strategic operators,” not “strategic leaders.”
 - Senior decisionmakers exist in an environment of relentless pressure caused by a 24/7 media cycle, as well as by enemies adept at exploiting information operations.
- Iraq remains the overriding priority.
 - Successes are fragile in the fight against al Qaeda in Iraq and in political agreements with Sunni and Shi’ite groups (political and military wings included), which means that a large U.S. troop presence (~65,000–115,000) likely will be required in the country for at least five years.
 - Continuing to fund and maintain operations will prove a challenge for any administration, especially if prolonged violence again flairs or a downturn in the U.S. economy occurs.
 - In the case of Iraq, there is low probability of further burden sharing with allies and partners (aside from the Iraqis, to whom the United States will continue to contribute significant training resources).
- Combating terrorism globally (the struggle against radical Islamists) remains a significant challenge, with no neat conclusion in sight.
 - Pakistan, in particular, will consume a significant amount of U.S. time and effort, with increasing U.S. involvement in foreign internal defense and other assistance missions.
 - Terrorists remain focused on striking the U.S. homeland; denying them that opportunity requires long-term commitment and careful short-term management.
 - The next administration will need to put forward its immediate plan for counterterrorism (the rebranding of the war on terror), and doing so will consume a significant portion of the first 100 days in office for senior leaders (determined not to be caught by another 9/11).
- Iran continues to pursue a military-use nuclear program.
 - The question of whether Iran can be contained may be moot in light of its connection to non-state groups, which cannot be deterred by established means.
 - Regional implications for a nuclear Iran require serious diplomatic commitment and security cooperation.
- China’s blockbuster economic growth and diplomatic onslaught around the globe in recent years—as well as its pursuit of military capabilities related to a possible invasion of Taiwan and its refusal to accept U.S. forces in the area—are causing growing concern about an antagonistic relationship with the United States.

- Barring a sudden economic decline or an internal political crisis, managing China's rise as a responsible stakeholder in the international system will remain an arduous task.
- The regional politics of "conengagement" with/of China are also very time-consuming, and they include a growing range of interactions with India.
- The U.S. and NATO International Security Assistance Force (ISAF) missions in Afghanistan are currently in a "stalemate" against Taliban and other Islamist militants in the region.
 - The need of U.S. senior defense policymakers to manage the NATO alliance in the context of Afghanistan has demanded a great deal of their time.
 - Reconstructing Afghanistan to stand on its own (without risking state failure) is a 10-year proposition (at least).
- Military transformation is essentially on hold as the force is "rebalanced."
 - Major near-term decisions will need to be made on issues such as continuing the F-22 line, fully funding the Army's Future Combat System, putting the Navy's troubled shipbuilding on course, and deciding the future of national missile defense.
 - Global posture and unified command structure issues such as establishing the new AFRICOM also will put demands on the time of senior policymakers.
- Energy security is a serious concern as global demand surges, oil prices reach historical highs, and any new administration will push to curtail CO2 emissions amid growing concerns about climate change.
- America's economic performance and ability to maintain twin deficits (in fiscal and current accounts) endanger the size of the national security and defense budgets.
 - The growing electoral demographic of baby boomer retirees will force policymakers to concentrate on issues such as health care, at the expense of discussion of and focus on national security.



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MAINTAIN GLOBAL AND REGIONAL STABILITY

Ensure Stability, Security, and Economic Prosperity in an Era of Globalization

- The visual layout of the poster:
 - Main graph displays global balance of power from a U.S. perspective.
 - Venn diagram is arrayed within an x- and y-axis.
 - X-axis indicates the increasing friendliness of a country or non-state group to the U.S. (the more likely it will support the U.S. on a range of issues).
 - e.g., the U.K. is likely the friendliest toward the U.S. and al Qaeda the least friendly.
 - Y-axis indicates the power of an international actor defined in traditional terms—derived from an approximation of its projected military strength, economic strength, population, and technology base out to 2030.
 - Four main classifications make up the Venn diagram: Great Powers, Allies and Partners, Non-Aligned, and Potential Adversaries.
 - A large, growing gap in power exists between the U.S., the other three Great Powers, and the next-strongest states.
 - Four key drivers listed in boxes at the corners of the poster, each with concurrent challenges and opportunities for the U.S.
 - The Changing International Order: the return of great power competition; changing notions of alliances; the challenge of dated international institutions not designed for the current environment.
 - The Influence of Non-State Actors: a loss of the nation-state’s monopoly on violence and its comparative advantages in controlling communication and information; powerful actors outside the state system capable of change both positive and negative.
 - U.S. Leadership: the continued importance of an America that supports global economic expansion, stability, and benevolent interest for the international system as a whole—all increasingly challenged and competed for by other states and non-state actors.
 - The Power of Petro-States: oil dependency drives anti-democratic behavior by supplier states, gives them increasing leverage in the international system; Russia is the key example.
- We live in an increasingly multipolar world.
 - The “unipolar moment” and the continuation of unipolarity are open to argument; but without a doubt the United States is headed into a world in which its power will be increasingly contested by a range of actors and alternatives.

- Other states and non-state actors in the international system have since the 1990s found ways to counterbalance U.S. power, and U.S. power has always had limits and bounds.
 - Following the demonstration of U.S. conventional superiority in the first Gulf War, potential adversaries focused their attention on asymmetric means to counter U.S. military dominance (fourth generation warfare).
 - Soft power challenge: a battle today exists for world opinion shaped by real-time media reaching everyone around the globe—a huge challenge for traditional nation-state governance.
 - Zbigniew Brzezinski calls this challenge the “great political awakening,” in which “modern populist political passions can be aroused even against a distant target despite the absence of a unifying doctrine (such as Marxism), with America increasingly the conflicted focus of personal admiration, social envy, political resentment and religious abhorrence.”
 - In addition to managing this global restlessness of the developing world, the U.S. will spend much of this century managing the rise of great powers (or the resurrection of a great power, in the case of Russia).
 - In this century the focus of U.S. foreign policy will mainly be not Europe but Asia and the Middle East.
 - Globalization is powered by hydrocarbon dependence, and such dependence has led to the rise of “petro-states” (Russia is the preeminent example), creating a new dimension to international power politics.
 - Non-state actors are a powerful, often misunderstood force in international affairs.
- The U.S. remains the preeminent state in the international system, but it will be increasingly difficult for the U.S. to exercise this power to achieve its political ends.
 - The U.S. will remain the world leader in many fields—e.g., military power, science, and technology—through 2030, and will be the largest economy through 2040.
 - Richard Haass on alliances: “In the 21st century, formal alliances will increasingly count for less. Alliances require predictability: of threat, outlook, obligations. But it is precisely these characteristics that are likely to be in short supply in a world of shifting threats, differing perceptions, and societies with widely divergent readiness to maintain and use military force.”
 - To maintain its hegemony, the U.S. will have to use all elements of its national power—a combination of the hard power security guarantee it provides (Pax Americana) along with its soft power to influence the domestic politics and international actions of other states.
 - The European Union will not be a competitor, nor will it necessarily be a cooperator.
 - Europe has reached limits to further integration in its foreign and security policy.
 - NATO is being tested in Afghanistan: how will this change the nature of the alliance?
 - Many states in the international system will be up for grabs—competed over by several centers of power: U.S., Russia, China, Europe.

- States that traditionally have focused solely on the U.S. will now broaden their interest to new centers of power—seeking to balance the powers against one another to their own advantage.
- The U.S. does not have a grand strategy.
 - The U.S. has lacked a grand strategy since containment of the Soviet Union.
 - The U.S. is most likely to continue to pursue its principles and values in lieu of a unifying grand strategy.
 - These values and principles include:
 - American exceptionalism (the ability to go it alone even when other major states disagree with it);
 - Promotion of liberal markets always and democracy when possible;
 - Realpolitik and an emphasis on military power.
- Three critical challenges to maintaining global and regional stability:
 - 1) States must determine how to work not only with other states but also with a range of non-state actors.
 - Non-state actors have eroded traditional Westphalian notions of the state monopoly on violence.
 - On 9/11 the weakest entity depicted on the graph—al Qaeda—was able to suddenly and dramatically rock the entire international system by attacking the strongest actor, the United States.
 - Traditional modes of deterrence don't hold up, and the likelihood of CBRN use by a non-state group is a serious problem (see “Mitigate Proliferation Threats” appendix section).
 - Non-state actors also represent a powerful force for good: e.g., the Bill and Melinda Gates Foundation and the private investment flows that have driven globalization and lifted hundreds of millions from poverty.
 - 2) Hydrocarbons power this era of globalization, but these sources of energy are not sustainable and environmental degradation adds a new layer of instability (see “Promote E3 Security and Human Rights” appendix section).
 - Hydrocarbon-rich states are overwhelmingly undemocratic and underdeveloped in all but their energy sectors.
 - There is an increasing trend toward petro-nationalism and anti-market behavior.
 - 3) To ensure global stability, there is a need to manage the discontents of globalization, share the success, and address painfully obvious inequalities.
 - The core of legitimacy of the governments in India and China rests on ensuring that their engagement in this system of globalization brings benefit to their populations.
 - Among the largest segment of the world that benefits from globalization least or least equally throughout its population is the Muslim world.
 - Real-time media, global transport, and telecommunication have led to a massive political awakening worldwide unlike anything seen before.

MAINTAIN GLOBAL AND REGIONAL STABILITY

Ensure Stability, Security, and Economic Prosperity in an Era of Globalization

Samuel J. Brannen

Following the collapse of the Soviet Union, there was a strategic pause in great power competition in the 1990s. Whether the international system experienced a true “unipolar moment”¹—and, if so, whether this unipolar system persists to the present—is open to some debate;² but without question, the United States emerged from the Cold War as the international system’s most powerful state.³ Although the gap between America and the next most powerful states is now closing, the United States is likely to maintain its preeminence for the foreseeable future. It will remain the world’s largest economy until at least 2040.⁴ U.S. military capacity, measured in terms of strategic and operational forces, is likely to far exceed that of any other state, and America will be the only state with significant global expeditionary reach until at least 2030.⁵ Despite changing global attitudes, it also remains the world’s most diplomatically and politically powerful state. The United States is looked to as a leader and, at the same time, as a cause of many of the world’s problems.

¹ This concept of the “unipolar moment” was coined by Charles Krauthammer, “The Unipolar Moment,” *Foreign Affairs* 70, no. 1 (Winter 1990/91): 23–33.

² Secretary of Defense Robert Gates has declared, “We are in a multi-polar world.” Quoted in Jim Lobe, “Can the US Brace Its Fall?” *IPS*, February 17, 2008, <http://www.ipsnews.net/news.asp?idnews=41232>. The debate about unipolarity versus multipolarity occurs most frequently among realists in the academic community. Scholars such as Robert J. Art and Barry Posen believe that this unipolar moment should be maintained for as long as possible to the greatest advantage of the United States. John J. Mearsheimer argues in *The Tragedy of Great Power Politics* that the United States is already engaged in a new era of great power multipolar conflict with China and the European Union. Interestingly, the historian Niall Ferguson has put forward the argument that we are entering a world of “apolarity,” in which the decline of the United States will not be filled by another power and ultimately global integration will unwind. See Niall Ferguson, “A World Without Power,” *Foreign Policy*, July/August 2004, http://www.foreignpolicy.com/story/cms.php?story_id=2579.

³ Not only did America emerge the most powerful state, but with the collapse of the Soviet Union, an exponential gap opened between U.S. power and the next-most powerful state (with power expressed in military, economic, and international political terms). The Russia that emerged from the USSR maintained a massive nuclear arsenal—and still does—but it paled in comparison with U.S. conventional military dominance, economic dominance, and political influence globally. But despite this concentration of power, the United States has limits that have been encountered across the globe as to what change and influence it can affect. Thus, it can be said that “unipolarity” certainly does not equate primacy in a literal sense.

⁴ See, among other credible long-range economic projections, Goldman Sachs, “Global Economics Paper Number 99: Dreaming with BRICs: The Path to 2050,” <http://www2.goldmansachs.com/insight/research/reports/99.pdf>.

⁵ This opinion is drawn from multiple discussions on the topic with U.S. Department of Defense officials, and partly on the findings of UK Ministry of Defence, Development, Concepts, and Doctrine Center, “The DCDC Global Strategic Trends Programme: 2007–2036,” 2007, <http://www.dcdc-strategictrends.org.uk/>.

The United States will be increasingly challenged in its influence and in how it can exercise its power. In the next decade and beyond, the United States *will* face an increasing number of competitors able to confront it in a range of domains, including the economic, cyber, and political spheres.

The principal focus of U.S. foreign policy will likely be managing the peaceful rise of potential superpowers—China and India—and seeking to maintain the dramatic, ongoing success of globalization while minimizing its discontents.⁶ A key to success will be invigorating existing alliances and establishing new modes of cooperation with other countries. The United States will also need to manage the influence of petro-states, with Russia and Iran as the most important near-term tests.⁷ Over the next decades, energy supply, transport, and consumption increasingly will drive many aspects of international relations.

If stability remains and no major conflict erupts, the global economy should be 80 percent larger in 2020 than it was in 2000, and average per capita income will grow by 50 percent.⁸ However, challenges to this positive outcome are likely to continue to arise from the portions of humanity that have yet to reap the benefit of globalization. Many of those still untouched by globalization—or who oppose its apparent outcomes and direction—live within what some have called the “arc of instability,”⁹ others the “non-integrating gap,”¹⁰ that stretches from Central America and the Andean nations of South America to all of Africa, the Middle East, Central Asia, and Southeast Asia. This geography overlays much of the Muslim world.

In the next decades, the United States will also find unprecedented opportunities to cooperate internationally across a range of challenges. How successfully it competes, collaborates, and sets its course in the 21st century will depend largely on how it manages all the instruments of its national power and adapts them to a changing world.¹¹ The world will continue to look to the United States for leadership—or, absent clear leadership, view it a scapegoat—in confronting climate change, infectious disease, violent transnational ideologies, and the growing ability of single individuals to perpetrate

⁶ See Joseph E. Stiglitz, *Globalization and Its Discontents* (New York: W. W. Norton, 1993).

⁷ It is highly unlikely that America and the world will break hydrocarbon dependency any time before the end of the 2020s. The most recent International Energy Agency’s World Energy outlook suggests surging demand for oil especially. This means that those states rich in oil and gas will continue to accrue enormous wealth and influence from the export and supply source control of these resources. See International Energy Agency, “World Energy Outlook 2007: China and India Insights,” <http://www.worldenergyoutlook.org/>.

⁸ National Intelligence Council, “Mapping the Global Future: Report of the National Intelligence Council’s 2020 Project,” http://www.dni.gov/nic/NIC_globaltrend2020.html.

⁹ The “arc of crisis”—referred to often as the “arc of conflict”—was coined by former National Security Advisor Zbigniew Brzezinski in the aftermath of the Iranian Revolution and the Soviet invasion of Afghanistan. Brzezinski’s remarks at the time referred to “a number of countries that have different internal causes of instability but cumulatively are facing widespread regional turbulence.” See “An Interview with Brzezinski,” *Time*, January 14, 1980, <http://www.time.com/time/magazine/article/0,9171,921766,00.html>.

¹⁰ Thomas P. M. Barnett, *The Pentagon’s New Map: War and Peace in the Twenty-first Century* (New York: Putman, 2004). Barnett bases his interpretation of this “non-integrating gap” on the “response data set” by Henry Gaffney at the Center for Naval Analysis, which is a compendium of all U.S. military responses around the globe since 1946–2004.

¹¹ The need to bring together all elements of national power has been a key theme of the second-term Bush administration, including Secretary of State Condoleezza Rice and Secretary of Defense Robert Gates. Most striking was this speech by Secretary Robert Gates “Landon Lecture (Kansas State University)” (speech given in Manhattan, Kansas at Kansas State University on November 26, 2007), <http://www.defenselink.mil/speeches/speech.aspx?speechid=1199>.

violence that can disrupt the international system, among other issues. In this multipolar world, the United States cannot count on consistent support from its partners. Single issues can quickly divide it from even close allies, who will shift at will to alternative centers of influence.¹² Pressures on governance at all levels will continue to increase, driven by the nearly real-time flow of information to populations.¹³

The new age of access to information has catalyzed what Zbigniew Brzezinski calls the “great political awakening.” In this new chapter in human history, he notes, “modern populist political passions can be aroused even against a distant target despite the absence of a unifying doctrine (such as Marxism), with America increasingly the conflicted focus of personal admiration, social envy, political resentment and religious abhorrence.”¹⁴ The United States must cope with the implications of this restlessness among a global population that will rise from 6.5 billion today to 8.3 billion in 2030, with 95 percent of that growth occurring in the least developed areas in the world. Also, by 2030, almost 60 percent of the world’s population will live in cities—historical hotbeds of modern revolutions and radical ideologies.¹⁵ The pace of this urbanization and internal migration is causing massive dislocations, accompanied by collisions between traditional and modern lifestyles.¹⁶

Military Power and Multipolarity

The 1990–91 Gulf War was such a convincing demonstration of the relative power of the United States’ military that a number of potential state adversaries or competitors spent the rest of the decade outlining strategies and tactics to hedge against U.S. strength on the conventional battlefield.¹⁷ Much of their evolving asymmetric strategy has been drawn from the innovations of non-state and transnational groups engaging in fourth generation warfare (4GW)—a phase in modern warfare in which the battlefield is without a central front, the lines between civilians and combatants are blurred, and battles are won and lost in the arena of psychological warfare (creating terror, winning or losing “hearts and minds”).¹⁸ The bottom line is this: as soon as the potential of unipolarity had been demonstrated in the international system, it was quickly checked by non-states relying on adaptation, evolution, and commercially available technology.¹⁹ States, in response, are themselves adapting as they seek to remain the most important

¹² A compelling case for this competition over the “second world” by the new great powers and Europe is made in Parag Khanna, “Waving Goodbye to Hegemony,” *New York Times Magazine*, January 27, 2008, http://www.paragkhanna.com/2008/01/waving_goodbye_to_hegemony.html.

¹³ This is well explained in Erik Peterson’s lectures delivered as part of the Seven Revolutions initiative. See CSIS Global Strategy Institute, “Seven Revolutions,” <http://7revs.csis.org/>.

¹⁴ Zbigniew Brzezinski, “The Dilemma of the Last Sovereign,” *American Interest*, Autumn 2005, <http://www.the-american-interest.com/ai2/article.cfm?Id=56&MI=1>.

¹⁵ For the first time in history, in 2007 the threshold was crossed with more people living in urban than rural environments (according to UN medium variant projections).

¹⁶ See Mike Davis, *Planet of Slums* (New York: Verso, 2006), 4–5. Davis notes that the largest settlements in human history are being created: for example, Mexico City, with 22.1 million inhabitants in 2004, is expected to reach 50 million inhabitants spread across the whole of central Mexico by the middle of the century, accounting for 40 percent of the country’s total population.

¹⁷ See, for instance, Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Beijing: PLA Literature and Arts Publishing House, 1999).

¹⁸ It is notable that the term “fourth generation warfare” was coined in 1989 in a prescient article by William S. Lind, Keith Nightengale, John F. Schmitt, Joseph W. Sutton, and Gary I. Wilson, “Changing the Face of War: Into the Fourth Generation,” *Marine Corps Gazette*, October 1989, http://www.d-n-i.net/fcs/4th_gen_war_gazette.htm.

¹⁹ Barry Posen makes an interesting argument that unipolarity does in fact continue to exist and the U.S. continues to maintain a serious advantage over other nation-states because of its “command of the commons.” He writes, “Command means that the United States gets vastly more military use of the sea, space, and air than do other states; that it can credibly threaten to deny their use to others; and that others would lose a military contest for the commons

forms of human organization in the international system. Though states may no longer maintain an absolute monopoly on violence,²⁰ they are nonetheless learning how to better counter non-state actors, transnational threats, and asymmetric capabilities more generally. A critical area in which states have thus far fallen short, however, is in updating their methods of deterrence, which are obsolete in the context of non-state actors and therefore risk catastrophic failure. For this reason, the proliferation, and particularly the availability to non-state actors, of chemical, biological, radiological, and nuclear (CBRN) weapons is of serious concern.²¹

The devastating shock of al Qaeda's terror attacks on 9/11 confirmed the success of a vastly less powerful enemy—as defined in traditional terms—in striking at the international system's most powerful state. Despite a convincing rout of the al Qaeda organization and Taliban in Afghanistan by U.S. military power enabled by net-centric warfare—such as precision airstrike and communication among highly dispersed, “light footprint” ground forces—the 9/11 attacks demonstrated the limits of dominance by any one state, even a “hyperpower” such as the United States.²² Both states and non-state actors will continue to employ innovative tactics and strategies in order to find weaknesses and to stay ahead of the U.S. cycle of innovation in counterterrorism technology.²³ Military power alone will fail to win wars, and the development of “soft power” capabilities and more effective approaches to foreign assistance to strengthen governments' institutions and enhance their legitimacy are necessary if the nation-building missions in which the United States is increasingly involved are to succeed.²⁴

Barring some unforeseen or unproven technological breakthrough in the years ahead, multipolarity will become more pronounced. Competition between states and within them will be more widespread and will occur in more domains, and the international system will also involve jockeying for power by non-state actors and transnational movements outside state control.²⁵ Such maneuvering for advantage has been seen, for example, in the complex security environment of post-Ba'athist Iraq.²⁶

if they attempted to deny them to the United States.” See Barry Posen, “The Command of the Commons,” *International Security* 28 (Summer 2003): 5–46.

²⁰ The concept that the state possesses “a monopoly on the legitimate use of physical force” was introduced by Max Weber in his essay “Politics as a Vocation” (available online in translation: http://www.ne.jp/asahi/moriyuki/abukuma/weber/lecture/politics_vocation.html). This concept of the centrality of control on violence in statecraft is particularly well examined in Charles Tilly, *Coercion, Capital and European States: AD 990–1992* (Boston: Wiley-Blackwell, 2007).

²¹ See the essay by Katharine Mitchell and Jessica Yeats in this report appendix, “Mitigate Proliferation Threats.”

²² Hyperpowers are states that are militarily, economically, and technologically dominant on the world stage. Amy Chua examines hyperpowers throughout history in *Day of Empire: How Hyperpowers Rise to Global Dominance—And Why They Fall*, New York (New York: Doubleday, 2007).

²³ The concept of innovation cycles is drawn from business theory and refers to a firm's ability to maintain a comparative advantage over rivals through innovation. If another firm “gets inside” its rival's innovation cycle, it can overtake it and gain the comparative advantage. This concept has frequently been applied to non-state actors and counterterrorism and counterinsurgency technologies. See, for example, James J. Carafano, “Heritage Foundation Lecture #885: The Future of Anti-Terrorism Technologies,”

<http://www.heritage.org/Research/HomelandSecurity/hl885.cfm>. An innovation cycle is related to John Boyd's concept of the “OODA” loop. See Defense and the National Interest, “Boyd and Military Strategy,” <http://www.d-n-i.net/dni/strategy-and-force-employment/boyd-and-military-strategy/>.

²⁴ This theme has been emphasized most fervently by Secretary of Defense Robert Gates, “CSIS Pre-Alfalfa Luncheon Speech” (speech given before the Alfalfa Club in Washington, D.C. at the Center for Strategic and International Studies in January 2008), <http://www.csis.org/media/csis/events/080128-lunch-gates.pdf>.

²⁵ For an excellent description of this new environment in military terms, see Thomas X. Hammes, *The Sling and the Stone: On War in the 21st Century* (Osceola, WI: Zenith Press, 2006); and Richard H. Schultz and Andrea J. Drew,

U.S. Grand Strategy

The United States lacks a neatly defined grand strategy at present; the last such strategy was the policy of containment aimed at the Soviet Union.²⁷ U.S. actions in the international system continue to be primarily based on its belief in the promotion of free-market capitalism and American exceptionalism—the ability to “go it alone,” eschewing the consent of many of its traditional allies in favor of ad hoc coalitions of willing states and, when need be, raw unilateralism.²⁸

These fundamental beliefs have translated into ensuring free trade, economic stability, and international security according to a U.S. model—the “Washington consensus.” The United States has pursued its objectives through its military strength and posture, bilateral diplomacy, multilateral diplomacy (often through regional organizations such as APEC [Asia-Pacific Economic Cooperation]), occasional wars of choice, and support for such international organizations as the International Monetary Fund (IMF), the World Bank, the World Trade Organization (WTO), and the United Nations.

Other values also frequently inform U.S. strategy and foreign policy, including a belief in the universality of the Wilsonian principles of self-determination and democracy. Despite recent setbacks in attempts to foster democracy and a possible return to *realpolitik*,²⁹ the United States will likely continue to exude an underlying sense of optimism and idealism while promoting abroad those liberal core values that have indelibly shaped its own historical narrative.

One behavior exhibited through its history to which the United States will likely *not* return is that of isolationism. The international system is too globalized and the volume of trade between the United States and other nations too high for such a course of action to be considered. The attacks of 9/11 also underlined the reality that homeland security preferably begins with the “away game.”

Insurgents, Terrorists, and Militias: The Warriors of Contemporary Combat, (New York: Columbia University Press, 2006).

²⁶ In the case of post-Saddam Iraq, the United States has fought against multiple indigenous non-state groups, non-state groups enabled or supported by states, non-state groups enabled or supported by transnational non-state movements, and former state elements (elements of the Ba’athist security apparatus). These overlapping factions and interests have made targeting a U.S. response difficult. This complex environment necessitates not only innovative approaches by the United States to reduce the chaos and confusion and settle on solutions that can be applied appropriately at the local level, but these environments rely heavily on local partners and cooperation. Knowledge of the “human terrain” of countries is therefore considered key in future conflicts. It is a logical counter or at least equalizer to the complex, decentralized nature of the enemy and his knowledge of local conditions. For a good primer on the uses of cultural knowledge in this mode of conflict, see Sheila Miyoshi Jager, *On the Uses of Cultural Knowledge*, (Carlisle, PA: Strategic Studies Institute, November 2007), <http://www.strategicstudiesinstitute.army.mil/pdf/PUB817.pdf>.

²⁷ Containment strategy was based on the famous article by George Kennan (under the name “Mr. X.”), “The Sources of Soviet Conduct,” published in *Foreign Affairs* 25 (July 1947), <http://www.foreignaffairs.org/19470701faessay25403/x/the-sources-of-soviet-conduct.html>

²⁸ A convincing argument for this point is made by Walter Russell Mead in *Power, Terror, Peace, and War: America’s Grand Strategy in a World at Risk* (New York: Vintage, 2005).

²⁹ See Walter Isaacson, “The Return of the Realists” *Time*, November 12, 2006, <http://www.time.com/time/magazine/article/0,9171,1558325,00.html>.

Alliances and International Relations

Unlike in the past century, in the years to come the United States will focus primarily on the Middle East and Asia, not Europe.³⁰ The European Union will not emerge as a serious competitor to the United States, as some have suggested,³¹ nor will Europe be an unfailing ally. Simply put, Europe's common foreign and security policy have stalled, as has its further integration. Its cooperation with the United States will therefore be increasingly ad hoc. States within Europe will continue to exercise their individual sovereignty in making international policy decisions (although the European Commission has emerged as a powerful regulatory bureaucracy that gradually will take fuller control of trade and commercial issues for the entire Union). Richard Haass believes we have entered a new "Palmerstonian moment." He writes,

In the 21st century, formal alliances will increasingly count for less. Alliances require predictability: of threat, outlook, obligations. But it is precisely these characteristics that are likely to be in short supply in a world of shifting threats, differing perceptions, and societies with widely divergent readiness to maintain and use military force.³²

Alliances and cooperation are integral to a rapidly globalizing and multipolar system, though this multipolarity translates into fluid and constantly shifting constellations of alliances and partnerships, as states seek a balance that maximizes their respective national interests.³³ With varying degrees of success, U.S. foreign and security policy can and does attempt to shape states' perception of their own national interests: for example, in regions where the United States can effectively demonstrate appropriate strength and resolve against potential aggressors, such perceived strength can attract allies.

Council on Foreign Relations Adjunct Senior Fellow for Alliance Relations Elizabeth Sherwood-Randall argues that the purpose of U.S. alliances in the 21st century should be fourfold: "[to] generate capabilities that amplify U.S. power; create a basis of legitimacy for the exercise of American power; avert the impulse to counterbalance U.S. power; [and] steer partners away from strategic apathy or excessive self-reliance."³⁴ Joseph Nye suggests that to avoid serious counterbalancing by others in the decade ahead, the United States will need to doggedly pursue old alliances and build new ones using traditional diplomatic and other nonmilitary approaches to shape the internal politics and international behavior of other states.³⁵

³⁰ See, for instance, remarks by Under Secretary of State for Political Affairs R. Nicholas Burns, "A Renewed Partnership for Global Engagement" (remarks at the European Institute Annual Gala Dinner, Mayflower Hotel, Washington, DC, December 15, 2005), <http://www.state.gov/p/us/rm/2005/58488.htm>. Burns said, "[W]e now find that our entire agenda is pivoting from an inward focus on Europe to an outward focus, and U.S.-European relations are increasingly a function of events in the Middle East, Asia and Africa."

³¹ See, for example, Rockwell A. Schnabel and Francis X. Rocca, *The Next Superpower? The Rise of Europe and Its Challenge to the United States* (Lanham, MD: Rowman & Littlefield, 2007).

³² Richard Haass, "The Palmerstonian Moment," *The National Interest*, January 1, 2008, <http://www.nationalinterest.org/Article.aspx?id=16518>.

³³ See Kenneth Waltz, "Anarchic Orders and Balances of Power," in *Neorealism and Its Critics*, ed. Robert Keohane (New York: Columbia University Press, 1986), 98–130.

³⁴ Elizabeth Sherwood-Randall, "The Case for Alliances," *Joint Forces Quarterly* 43 (4th quarter 2006): 54–59.

³⁵ See Joseph S. Nye, *The Paradox of American Power: Why the World's Only Superpower Can't Go It Alone* (Oxford: Oxford University Press, 2003). Nye has also argued that "By embedding its policies in a multilateral framework, the United States can make its disproportionate power more legitimate and acceptable to others, "Recovering American Leadership," *Survival* 50, no.1 (2008): 62.

The United States' established treaty alliances—with North Atlantic Treaty Organization member states, South Korea, Japan, Australia, New Zealand, and the Philippines³⁶—allow for the conduct of interstate relationships through institutionalized processes, such as the sharing of intelligence, and in some cases military interoperability.³⁷ Most of these treaty alliances were formed in the 1950s and, as pointed out by Haass, diverging interests in the post-Cold War period have weakened those bonds. A cleavage in security interests between the United States and its allies is apparent from Europe to Turkey to East Asia. To better meet the challenges in today's security environment, the United States will have to actively work to repair its relationships.³⁸ Indeed, it may need to fundamentally rethink the meaning of alliances.

More recently, the United States has pursued what it calls “major non-NATO ally” (MNNA) status agreements with foreign partners. Not true “alliances,” as they do not include mutual defense, these relate more to technical issues of security assistance and arms transfers. MNNA's are Australia, Egypt, Israel, Japan, South Korea, Jordan, New Zealand, Argentina, Bahrain, Philippines, Thailand, Kuwait, Morocco, and Pakistan.

Since the end of the Cold War, many of America's closest allies have experienced a precipitous decline in military power. They have failed to transform their forces and modernize,³⁹ and the result is a gap between the United States and its allies that continues to widen. Of the 26 NATO allies, only 6 have made the commitment to devote 2 percent of gross domestic product to defense and national security.⁴⁰ The future of NATO itself has been called into question by some,⁴¹ as the current struggle in Afghanistan underlines broader difficulties plaguing the alliance in today's security environment.⁴² Though some analysts hold out hope for a balancing of capabilities—the nonmilitary capacity of allies could complement the continued military strength of the United States, especially in stabilization operations—such cooperation is uncertain, unproven, and thus far more theoretical than practical. The key question is whether the future of U.S.-allied cooperation will look more like the Balkans in the 1990s or like Iraq in the 2000s.

³⁶ The United States is also a treaty ally with all members of the Organization of American States, as outlined in the Rio Treaty, which was ratified by the U.S. Senate in 1947. This treaty is considered to be defunct, however. America's relations with Latin America are complex, fraught with obscure legal grounds and precedents, including the lingering effects of the Monroe Doctrine. Latin America appears poised to take a decidedly less inward-looking and more internationalist direction in the decades ahead. A key spur is the inflow of Chinese investment. Anecdotal evidence of Latin America's more global stance in the 21st century is provided by Panama's recent mandate that all its students learn Mandarin.

³⁷ In many cases, information sharing could be improved in response to today's more fluid threat environment. See Derek S. Reveron, “Old Allies, New Friends: Intelligence-Sharing in the War on Terror,” *Orbis* 50, no. 3 (Summer 2006): 453–68.

³⁸ The lead-up to the 2003 Iraq War unquestionably damaged relations with Europe. See, among others, Philip Gordon and Jeremy Shapiro, *Allies at War: America, Europe, and the Crisis Over Iraq* (New York: McGraw-Hill, 2004), and Tod Lindberg, ed., *Beyond Paradise and Power: Europe, America, and the Future of a Troubled Partnership* (New York: Routledge, 2004).

³⁹ See, for a discussion of European decline and possible repair, Michèle A. Flournoy et al., “European Defense Integration: Bridging the Gap between Strategy and Capabilities,” CSIS Press, 2005, <http://www.dii-csis.org/pdf/ReportEuropeanDefenseIntegration.pdf>.

⁴⁰ Robert Gates, “CSIS Pre-Alfalfa Luncheon Speech”.

⁴¹ See, for example, “The End of NATO,” *Wall Street Journal*, February 10, 2003, <http://www.opinionjournal.com/editorial/feature.html?id=110003049>.

⁴² See Amin Tarzi, “Afghanistan: The End of NATO's Honeymoon?” Radio Free Europe/Radio Liberty, <http://www.rferl.org/featuresarticle/2006/02/7c4cb4e5-7b4d-48e3-b4e4-abfac74722dd.html>.

Many of the key institutions that the United States relies on to advance its interests and promote its values abroad are in need of reform or reinvigoration. The United Nations is chief among these.⁴³ Other institutions are also in need of rethinking or replacement to maintain peace and stability in regions and the international system beyond the Cold War. The latest round of WTO talks have stalled, and other international financial and development institutions appear increasingly ineffective.⁴⁴ The limits to further international integration may have been reached. There is currently no real movement in the international community to create new international institutions to complement or replace those established following World War II, with the United States as the lead architect.⁴⁵ Meanwhile, new regional institutions and cooperation frameworks created since the end of the Cold War—such as the Shanghai Cooperation Organization, the Collective Security Treaty Organization, and the East Asian Summit—seek to reduce U.S. influence.

Managing the Rise of Great Powers

Some have argued that China will begin to overtake the United States as the world's most powerful state within the next decade.⁴⁶ Barring unforeseen developments, that will not occur.⁴⁷ However, China is already exerting enormous international influence around the globe through trade, direct investment, and its so-called soft power offensive.⁴⁸ It is expanding its influence well beyond East Asia, reaching throughout Africa and South America. The People's Liberation Army is modernizing and pursuing capabilities that could be used against the United States in the event of a conflict.⁴⁹ Taiwan remains a major flashpoint and a central focus in China's foreign policy. Its status is also the single issue that is most likely to spark a hot war between the United States and China.

Internal instability related to uneven economic development remains a potential restraint on China's rise, as it threatens the delicate balance of consent to the ruling Communist Party and its symbiotic relationship with the business elite. Environmental damage and degradation,⁵⁰ as well as a

⁴³ For an overview and list of internal UN statements on the need for reform, see "Reform at the United Nations," <http://www.un.org/reform/>.

⁴⁴ This debate goes back to the mid-1990s. See, for example, Daryl Lindsey, "World Bank and IMF: Good, Evil, or Irrelevant?" *Salon*, April 14, 2000, http://dir.salon.com/story/news/feature/2000/04/14/imf_fightclub/.

⁴⁵ Secretary of Defense Donald Rumsfeld frequently invoked Truman and his legacy to suggest that the time for a new round of U.S. rethinking of internationalism and institutions may need to be undertaken. See, for example, Donna Miles, "Rumsfeld Cites Truman as Inspiration for Nation Today," *American Foreign Press Service*, March 2, 2006, <http://www.defenselink.mil/news/newsarticle.aspx?id=15286>.

⁴⁶ See, for example, Oded Shenkar, *The Chinese Century: The Rising Chinese Economy and Its Impact on the Global Economy, the Balance of Power, and Your Job* (Philadelphia: Wharton School, 2004); James Kynge, *China Shakes the World: A Titan's Rise and Troubled Future—and the Challenge for America* (Boston: Mariner Books, 2007); Ted Fishman, *China, Inc.: How the Rise of the Next Superpower Challenges America and the World* (New York: Scribner, 2005). For a counterpoint discussing internal instability in China and potential vectors for its diminution in power, see Peter Navarro, *The Coming China Wars: Where They Will Be Fought and How They Can Be Won* (Upper Saddle River: FT Press, 2006).

⁴⁷ For an objective look at China's rise, see C. Fred Bergsten, Bates Gill, Nicholas R. Lardy, and Derek Mitchell, *China: The Balance Sheet* (New York: Public Affairs, 2006).

⁴⁸ See Joshua Kurlantzick, *Charm Offensive: How China's Soft Power Is Transforming the World* (New Haven: Yale University Press, 2007).

⁴⁹ See Department of Defense, "Annual Report to Congress: Military Power of the People's Republic of China 2007," <http://www.fas.org/nuke/guide/china/dod-2007.pdf>.

⁵⁰ See, for example, Elizabeth Economy, *The River Runs Black: The Environmental Challenge to China's Future* (Ithaca, NY: Cornell University Press, 2005).

large elderly population supported by a declining numbers of workers, are also serious threats to China's long-term growth and political model.⁵¹

India is the world's other, often overlooked, "superpower candidate" country. It enjoys the distinction of being the world's largest democracy, though its sources of internal instability are numerous and its relations with neighbors are troubled. By 2035, India will overtake China as the world's most populous country, with more than 1.4 billion inhabitants (China's population will be in decline by that point). The Indian economy is one of the world's fastest growing, second only to China's.⁵² By 2025 India may be the world's fifth-largest consumer market, as its middle class grows to 583 million people (41 percent of the country's total population).⁵³ The international affairs commentator Thomas Friedman has argued that India is ultimately likely to rise beyond China economically and geopolitically because of its focus on technology and services paired with its democratic institutions.⁵⁴

Already, a large share of U.S. national security effort and diplomatic and military engagement is focused on China and India. These countries are increasingly decisive in setting the international agenda, on subjects from climate change to free trade, and their influence is almost certain to grow further in the decades ahead. Their stances on these issues varies, sometimes strongly supportive of and other times directly opposed to U.S. positions.

Petro-States

The industrialization and modernization of the world's two most populous countries—China and India—has greatly increased the worldwide demand for materials and resources, ranging from copper and steel to hydrocarbons. The surge in hydrocarbon demand and prices, in turn, has had an immense effect on the geopolitical trajectory of resource-rich states.

It is no secret that oil and gas riches often bring with them a "resource curse." According to this paradox—partly explained by inflationary pressures—the most resource-rich states have the lowest levels of actual economic development. Extractive industries are often at the center of widespread corruption and promote the formation of *rentier* states, in which corrupt governance continues to fester—despite national wealth—by providing kickbacks to buy off key segments of the local population while paying little attention to longer-term economic growth or the development of other economic sectors.⁵⁵ Reform in resource-rich states—from Saudi Arabia to Nigeria—has a bad track record.

Among petro-states, Russia is the clear superpower. Russian resurgence under President Vladimir Putin has been enabled by the state's takeover of the extractive resources industry, reversing the vast privatizations of the 1990s and replacing the Russian oligarchs with former and current officials of the

⁵¹ See Richard Jackson and Neil Howe, *The Graying of the Middle Kingdom: The Demographics and Economics of Retirement Policy in China* (Washington, DC: Center for Strategic and International Studies 2007).

⁵² Chris Burns and Cherie Thomas, "India May Sustain 9% GDP Growth for Record Third Year," Bloomberg News, December 2, 2007, <http://www.bloomberg.com/apps/news?pid=20601087&sid=a0yR5KThFcmk&refer=home>.

⁵³ McKinsey Global Institute, "The 'Bird of Gold': The Rise of India's Consumer Market," May 2007, http://www.mckinsey.com/mgi/publications/india_consumer_market/index.asp.

⁵⁴ See Thomas Friedman, "Bangalore: Hot and Hotter," *New York Times*, June 8, 2005, <http://www.nytimes.com/2005/06/08/opinion/08friedman.html>.

⁵⁵ See Kiren Aziz Chaudhry, *The Price of Wealth: Economies and Institutions in the Middle East* (Ithaca, NY: Cornell University Press, 1997).

Federal Security Service and pliant collaborators appointed to run Gazprom and other Russian conglomerates.⁵⁶ In its foreign policy, Russia has encouraged energy dependency in states it wishes to influence—especially in Europe and among former Soviet states.

Other petro-states have taken notice of the Kremlin's political use of Russian hydrocarbon wealth. Venezuela's president, Hugo Chávez, has sought to turn his anti-American rhetoric to action through petro-diplomacy, seeking even to displace established international financial institutions led by the United States and Europe with his own development bank, and has engaged with other antidemocratic petro-states to form a political bloc.⁵⁷ In the process, he is neglecting the development of his own country—a failure that could lead to a rapid reversal of his power and that has implications for the legitimacy of petro-despots in other countries. Without question, Iran's leverage in nuclear negotiations has been increased by its oil and natural gas exports. The volume of Iranian trade with several of the states that have permanent seats in the UN security council or are involved in other multilateral negotiations has led to a weaker international response than would otherwise be the case.⁵⁸ Bolivia has also used its gas wealth to break with the United States on some issues related to narcotics trafficking. Each of these cases may change depending on domestic politics and economics, but the underlying trend is clear: if hydrocarbon demand and therefore prices remain high, the leaders of energy-rich countries will have far greater opportunities to blaze their own paths, often in direct conflict with U.S. interests.

A counterexample to these tendencies is Dubai in the United Arab Emirates. The emirate of Dubai has translated energy wealth into sustainable economic growth built on other sectors, and it has also sought to establish internal transparency and regulation to attract international investment and business. Yet Dubai also underlines the new preference for converting petrodollars into holdings of U.S. assets through so-called sovereign wealth funds. These state-held investments increase the interconnection between the United States and petro-states. In addition, Dubai has based much of its success on a steady inflow of South Asian migrant workers, none of whom are eligible for citizenship in the country.

Non-State Actors

The growth of political and military power outside of the state system is a double-edged sword, as non-state actors have an increasing ability both to effect positive social and economic change and to inflict horrific violence with mass casualties. Non-state actors who choose to adopt terrorist tactics benefit greatly from the ease and affordability of international travel and communication. Al Qaeda is an obvious case in point.⁵⁹ The cult that attacked the Tokyo metro system in 1995 with sarin gas, Aum Shinrikyo, is another chilling example of a transnational group committed to the use of mass violence and taking advantage of access to modern technology.⁶⁰

⁵⁶ "Russia Under Putin: The Making of a Neo-KGB State," *The Economist*, August 23, 2007, http://www.economist.com/displayStory.cfm?story_id=9682621

⁵⁷ For a description of this phenomenon of translating oil wealth into regressive politics, see Thomas Friedman, "The First Law of Petropolitics," *Foreign Policy*, May/June 2006, http://www.foreignpolicy.com/story/cms.php?story_id=3426

⁵⁸ See, for example, Dafna Linzer, "U.S. Urges Financial Sanctions on Iran," *Washington Post*, May 29, 2006.

⁵⁹ For an in-depth analysis of the individual and group dynamics of Al Qaeda, see Lawrence Wright, *The Looming Tower: Al-Qaeda and the Road to 9/11* (New York: Knopf, 2006).

⁶⁰ For an account of the Aum Shinrikyo group, see Robert S. Robins and Jerrold M. Post, *Political Paranoia: The Psychopolitics of Hatred* (New Haven: Yale University Press, 1997), 130–39.

Non-state actors have come to define the security environment in much of the world: in many regions they have created “states within states,” making political progress impossible unless they are either included or neutralized. These areas of weak governance, unincorporated into central state governments, pose serious threats to the international system.⁶¹ Examples exist from Sri Lanka, with its Tamil Tigers, to Colombia, with the FARC (Revolutionary Armed Forces of Colombia) and ELN (National Liberation Army), to Lebanon, with Hezbollah; and the Palestinian territories, with Hamas (now elected to government).

Yet non-state actors can also be positive forces for change. The Bill and Melinda Gates Foundation, for example, has committed billions of dollars to address challenges in global public health that governments and international organizations were not adequately engaging.⁶² Nongovernmental organizations are delivering services and innovative development models to those still untouched or those harmed by globalization. NGOs may be a large part of the solution to managing the global political awakening and the growing backlash to globalization.

The growing power of transnational corporations in the international system must be taken into consideration as well. Already, the revenues of the world’s largest companies dwarf the GDP of many countries. Their impact on local economies and governments is nothing new—consider the United Fruit Company in the first half of the twentieth century in Latin America, for example—but increasingly companies are paying attention to more than simply profit. Corporate social responsibility has heightened the interest of businesses in affecting policy more generally.⁶³ The financial flows and investment dollars they command make foreign assistance pale in comparison, and in some cases they have stronger and more influential relationships with foreign governments than do the governments of their home countries.

Challenges of a Changing International System

The changing international system poses three critical challenges that the United States must address in the coming decades if it is to continue to play an active role in maintaining global and regional stability. First, states increasingly must navigate not only the perennial difficulties of international relations but also complex relations with non-state actors. These non-state actors range from the benign or beneficial to the malevolent and malignant. Across the board, non-state actors have growing influence in an international system in which even individuals can dramatically alter the course of human history. This influence ranges from the massive financial flows in markets and investment that bring development and improve standards of living to the possibility of a catastrophic CBRN attack that could bring a country or the international system to its knees.⁶⁴ Existing international institutions and structures struggle to properly accommodate the role of non-state actors. In its speed and scope, their influence resembles that of the networks that connect the world (particularly the Internet, transnational shipping, and human migration).

⁶¹ See Robert D. Lamb, “Ungoverned Areas and Threats from Safe Havens,” Final Report of the Ungoverned Areas Project, Prepared for the Office of the Under Secretary of Defense for Policy (2008).

⁶² For more on the growth of “mega-philanthropy” see Matthew Bishop, “For the Love of Mankind,” *The Economist*, The World in Print 2008 Edition, http://www.economist.com/theworldin/displaystory.cfm?story_id=10094810.

⁶³ See, for instance, CSRwire, a news wire service covering only corporate social responsibility, <http://www.csrwire.com/>.

⁶⁴ Please see the essays in this report appendix by Katharine Mitchell and Jessica Yeats, and by Cassandra Smith.

In some cases, states have been unduly coerced by much weaker non-state actors that are accountable to no one, causing dangerous, unexpected imbalances of global power, such as occurred on 9/11. These moments jeopardize global stability, threatening the majority with a tyranny of the few and encouraging fragmentation. Such disorder bodes ill for surmounting challenges that span the planet and require coordination, such as addressing global warming, combating radical ideologies, and reducing poverty and inequality.

The system, of course, is not static. States are adapting to the roles played by non-state groups, in some cases learning to take advantage of their strengths, tactics, and strategies. Doing so can have positive results, as when nongovernmental organizations work in cooperation with governments to restore war-ravaged countries. Or it can be decidedly harmful. States have been quick to exploit violent non-state actors to attack rival states without fear of accountability and retribution (thereby waging proxy warfare). Moreover, the power of non-state actors may increasingly encourage states to reassert their individual power by withdrawing from the global system and embracing protectionist and isolationist policies. Non-state actors feed off globalization and the ceding of state sovereignty—for better and for worse. It will be necessary for states and international organizations to better manage and control their engagement with non-state actors—from energy companies to terrorist organizations to advocacy groups—to maintain stability and the unprecedented prosperity that this era of global integration has brought.

Second, globalization has been powered by fossil fuels; but dependency on this energy source has caused instability across the world through its role both in damaging the environment and in creating the undemocratic petro-states. Climate change and other forms of environmental degradation related to the use of fossil fuels are reaching a critical point.⁶⁵ The net effect of this environmental impact is growing insecurity across the planet as it contributes to humanitarian disasters, regional conflicts, and a widespread economic downturn. Demand for hydrocarbons has skyrocketed across the globe as the global population continues to grow, and as more of this population attains the resource-intense living standards of developed countries. The net result is the creation of more greenhouse gases, causing further damage to the already critically stressed environment and accelerating climate change.

The possession of large supplies of oil and gas, in particular, has also stimulated the rise in petro-states that use their resource wealth to resist outside pressures to reform their undemocratic domestic political systems. Not all energy-rich countries behave this way (Norway, for instance, is an exception); but most do. These petro-states have modeled themselves on a resurgent, authoritarian, statist Russia. They assert regional and even international influence that they otherwise could not wield. By and large, this influence has been against U.S. interests: the export of the radical form of Wahabbi Islam across the globe by Saudi Arabia, the pursuit of nuclear weapons by Iran, antidemocratic interventions by Russia across its former Soviet domain, or the anti-American populism of Venezuela under Hugo Chávez. Although this behavior by petro-states has a lengthy history, the surge in demand for and high price of oil have magnified its effects to a new level—particularly in an increasingly multipolar world.

To meet the challenge of moving the world away from hydrocarbon dependency will take at least two decades and possibly longer. In the interim, the world will be increasingly destabilized as climate

⁶⁵ For a full explanation, please see the essay in this report appendix by Sam Brannen, John J. Burgeson, and Cassandra Smith.

change exacerbates existing environmental challenges, and petro-states will remain potent, decisive actors in the international system. The United States will have little power to change this state of affairs, unless it harnesses technology to become a significant energy exporter.

And third, ensuring global stability will require leadership from the most powerful country in the international system, the United States. The United States must make a compelling argument that there is still value in a system of global economic integration and an international architecture that largely follows its own design. It must continue to argue for good governance and liberal market reform in the areas of the world that have backed away from these goals in recent years. The China and Dubai models of authoritarian government and centrally managed development now compete with a U.S. vision of modernization. The choice is clear: the United States can unconditionally cede hegemony in the international system; it can struggle to maintain its approach as it stands; or it can work to create a new model that is inclusive of other powerful states, rather than fighting the reality of multipolarity. This step will likely necessitate the development of new 21st-century institutions, or the serious reform of existing mid-20th-century ones.

The successes of globalization have lifted hundreds of millions from poverty, but progress has been uneven and current data indicates persistent—perhaps even increased—inequality both within and between countries. Real-time media, global transport and trade, and seamless telecommunication have led to a massive political awakening and awareness unlike anything before seen in human history. The legitimacy of governments in every country open to the global economy relies on demonstrating that the current global system yields domestic benefits. Managing the discontent and building consensus will be critical to maintaining regional and global stability.

PROVIDE HOMELAND SECURITY

Provide Active, Layered Defense with Readiness to Support Incident Management

- The visual layout of the poster:
 - U.S. map: the homeland.
 - The red, dotted outline of the United States (CONUS plus Alaska and Hawaii) signifies that borders are drawn on maps but permeable in any number of ways, and must be enforced by human beings with finite resources.
 - Proposed border fences are drawn in black along the U.S.-Mexico border.
 - Attacks can come against the homeland by land, by sea, by air, and through cyber or virtual means.
 - The center of the map displays the Department of Homeland Security's 17 sectors of critical infrastructure and key resources, each with cross-cutting physical, cyber and human elements.
 - Threat vectors and key issues are arranged around the rest of the map (e.g., screening entrants).
 - Interagency process in homeland security (lower left corner), and key providers of homeland security (lower right corner).
 - Homeland security depends on coordination between almost every federal department and agency, and also necessitates cooperation with state and local authorities, as well as the private sector.
 - Mechanisms for this coordination must be in place to function before, during, and after a crisis.
 - The complexity of managing coordination, shared situational awareness, and public communications is vast.
 - Active, layered defense.
 - Homeland security is not only about securing borders.
 - Homeland security necessitates multiple layers and active overseas engagement.
 - Many of the threats the U.S. faces are globalized in nature, especially transnational terrorist groups and criminal networks.
 - Threats can originate from both within and outside of the United States, or they may materialize from a combination of both vectors.
 - Examples of forward, active, layered defense include intelligence sharing with foreign partners, covert or clandestine direct action abroad, and multinational cooperative security arrangements such as the Proliferation Security Initiative.
 - Active, layered defense means that the military provides homeland security under the authority of the Department of Homeland Security and other agencies (as appropriate)—not as a parallel, stovepiped process.

- Homeland security attempts to prevent another 9/11 and another Hurricane Katrina–type failure in initial response.
 - The 9/11 Commission report asserts: “the 9/11 attacks revealed four kinds of failures: in imagination, policy, capabilities, and management.”
 - The question is to what extent these failures have been repaired.
 - Creation of even more bureaucracy and processes has been “the solution” in many cases: the Department of Homeland Security and the Office of the Director of National Intelligence.
 - Hurricane Katrina underlined remaining problems in cooperation between state, local, and federal authorities, as well as the problems of managing expectations among the public for what is possible in a response.
 - Homeland security is incredibly complex and necessarily touches the heart of the American way of life: our society prospers because it is open and free, and yet protecting our society poses a challenge to openness and freedom.
 - International security and homeland security are far more interconnected than reflected in or allowed by our laws and government processes.
 - An active, layered defense necessitates not only interagency, state, local, and private-sector cooperation but cooperation with allies and partners worldwide.
 - Critical questions remain about who would lead the response in managing a major incident.
 - DoD had to take over Hurricane Katrina response.
 - Tensions between foreign defense obligations and domestic responsibilities, especially for the National Guard.

- Key threat areas:
 - CBRNE
 - Preventing a nuclear disaster is the top priority (see the poster on mitigating proliferation).
 - Keep fissile materials and other CBRN components/agents out of CONUS, Alaska, and Hawaii.
 - Proliferation Security Initiative (PSI) as an example of intercepting threats away from U.S. shores.
 - Biological
 - Growing ease of “DIY” biotech; repeat of 2001 anthrax attacks possible but on a larger scale, possibly with an engineered pathogen.
 - Naturally occurring threat also: pandemics.
 - Counter-IED
 - The weapon of choice for terrorists attacking the U.S. prior to 9/11 (e.g., the 1995 Oklahoma City bombing, a vehicle-borne IED).
 - Overseas trends also indicate U.S. should be prepared for IED attacks at home.
 - Aviation security
 - Terrorists have a long-standing fascination with breaching aviation security and have had success in hijackings and other attacks on aircraft.
 - A major vulnerability is the availability of MANPADS to terrorist groups—shifting the focus to taking down aircraft by external means.

- Doing so is especially critical to catastrophic incident management.
- Need to clearly define roles and missions for DoD and DHS, and processes within DHS.
- Essential to enabling active, layered defense.
- 2) Identifying, prioritizing, and assigning risk to the constellation of threats (the failures of imagination and policy identified in the 9/11 Commission report).
 - There has been an overemphasis on terrorism as the only threat to the homeland.
 - Climate change, pandemics, many other vectors have not been properly understood, appreciated, or planned for.
 - The most basic area of infrastructure security is largely ignored because of its expense.
 - This will likely mean making trade-offs that affect the bottom line of the defense budget.
- 3) Reforming bureaucratic processes and coordinating interagency, state, local, and private sector (the failures of policy and management identified by the 9/11 Commission report).
 - This challenge applies to intrinsic tensions in the legal structure between international and national operations (illustrated by FISA), and to parallel, often competing structures (HSC versus NSC, for example).
 - DHS and the intelligence community also remain handicapped, to the point that they risk failing in their mission to provide homeland security.

PROVIDE HOMELAND SECURITY

Provide Active, Layered Defense with Readiness to Support Incident Management

Jeremy P. White

The openness of U.S. society remains critical both to the American way of life and to the continued growth and stability of the U.S. and global economies. However, it is this very openness that leaves the United States so vulnerable to attack. The secure flow of goods through America's vast supply chain is a vital component of the nation's economy; and yet the system as a whole remains dangerously insecure. In 2007, the retail market accounted for \$3.127 trillion of the U.S. economy.¹ Setting aside the worst-case scenario of an attack in a major urban area carried out with a nuclear device or with fissile material smuggled across any of the numerous weak points in U.S. ports of entry, even relatively minor events such as the contamination of food products, deliberate or not, have had disastrous effects on the U.S. economy.² As the range of domestic security concerns grows ever wider, it will become absolutely necessary for all levels of government to join forces with the private sector in order to secure a larger portion of the 85 percent of the nation's critical infrastructure that is not federally controlled.³

The 9/11 Commission report identified "four kinds of failures: in imagination, policy, capabilities, and management."⁴ Four years later, policymakers have acknowledged the danger posed by future attacks but have failed to develop the foresight necessary to stop them. Overactive imaginations have led to an excess of spending on the most unlikely yet most potentially spectacular threats. Often the most visible threats (e.g., deteriorating infrastructure) receive the least notice, as they are deemed not "catastrophic" enough to warrant funding or attention. Too much focus on individual terrorist threats has distracted policymakers from the much more important goal of formulating a successful strategy in the broader struggle against radical Islamists.⁵ This new war is fought by the military abroad and by federal and local law enforcement at home. Yet while the budget of the Department of Defense (DoD) has grown steadily over the past few years, the Department of Homeland Security (DHS) has been asked to do more with less. When the full spectrum of homeland security threats becomes clear, it is apparent that neither DoD nor DHS alone can ensure the security of the United States. It is thus necessary for the federal

¹ CIA World Fact Book, <https://www.cia.gov/library/publications/the-world-factbook/geos/us.html#Econ> (accessed January 23, 2008).

² The economic damages resulting from the 2006 *E. coli* outbreak involving contaminated spinach were estimated by Dan Sumner, an economist at the University of California, Davis, to be about \$100 million. Michael S. Rosenwald and Annys Shin, "Search Narrows for Source of E. Coli," *Washington Post*, September 21, 2006.

³ The White House, "NSIS—Sharing Information with the Private Sector," <http://www.whitehouse.gov/nsc/infosharing/sectionV.html>.

⁴ National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States* (New York: Norton, 2004), 339.

⁵ See the section in this report appendix on "The Struggle Against Radical Islamists."

government to clearly define roles for both agencies in order to ensure a basic level of capability to handle all situations that may arise.

In an increasingly interconnected world, the United States can no longer think in terms of foreign and domestic threats: it must instead combine international and homeland security efforts to form a unified national security strategy. Terrorism seeks to intimidate the widest audience possible—not necessarily to directly kill or injure the greatest number of people (though al Qaeda attempts to do both when possible). The fight against terrorism is not like the total wars of interstate conflict, in which the motives are known and the threats are visible. Therefore, those policymakers, civil servants, military personnel, local officials, and police responsible for homeland security cannot expect any particular threat vector. Instead, they must remain vigilant across a wide spectrum.

Without question U.S. homeland security must commit extensive resources to minimize the threat from chemical, biological, radiological, and nuclear (CBRN) weapons, but decisionmakers must also devote equal resources to countering more conventional threats. Homeland security is broadly defined as defending against threats that range from improvised explosive devices (IEDs) to pandemics and natural disasters. At present, U.S. counterterrorism strategy remains more reactive than proactive. In addition to preventing known methods of attack, the United States must also prepare for terrorism's next inevitable evolution, so that Americans will never again have to learn about the importance of prevention and preparedness after a catastrophe has already occurred.

In the post-9/11 world, policymakers have committed significant resources to preventing deliberate acts of terrorism at the expense of preparing for naturally occurring disasters such as hurricanes and pandemics. The failure of the federal government to adequately respond to Hurricane Katrina in 2005 underlined the fundamental lack of interagency coordination on major homeland security incidents. The federal response to such disasters has displayed breakdowns in the continuity of operations, preventing resources from being deployed to areas where they were most needed.⁶ Katrina highlighted the basic fallacy into which the homeland security community repeatedly falls: a tendency to focus too heavily on the most spectacular attacks without adequate preparation for more plausible scenarios. In the future, policymakers must strike the appropriate balance between imagination and risk management based on rigorous assessment of the known threat environment, and divide the nation's resources accordingly.

Aviation Security

Terrorists have long been fascinated with the idea of attacking commercial airliners. Air travel is symbolic of what they perceive to be the decadent modernization of the Western world.⁷ There is huge theatrical value in seizing aircraft—and, after 9/11, in downing them or crashing them into other structures; and as Brian Jenkins has observed, terrorism is theater.⁸ Furthermore, the airline industry accounts for a substantial part of the U.S. economy. Travel and tourism are now the largest industries in the world, with U.S. commercial airlines and their related businesses bringing in more than \$150 billion

⁶ The White House, *The Federal Response to Hurricane Katrina: Lessons Learned*, 2006, 50.

⁷ "Terrorist Attacks in Israel," GlobalSecurity.org, <http://www.globalsecurity.org/military/world/war/israel-terror.htm>.

⁸ Brian Michael Jenkins, "International Terrorism: A New Mode of Conflict," in *International Terrorism and World Security*, ed. David Carlton and Carlo Schaerf (London: Croom Helm, 1975), 16.

in revenue in 2007 and employing nearly 1.1 million people.⁹ Air travel is the backbone of American business with passengers in 2007 taking more than 678 million trips.¹⁰ The three-day air travel suspension following the attacks on September 11, 2001, had a significant impact on the airline industry as well as the U.S. economy as a whole. The industry took more than a year to fully recover.¹¹

Since the formation of the Transportation Security Administration (TSA) following the 9/11 attacks, the layered security at airports is now more difficult for terrorists to penetrate. The addition of federal air marshals to roughly 5 percent of all domestic flights and the securing of cockpit doors have also greatly reduced the likelihood of any future hijackings.¹² The greatest weakness in U.S. air security strategy, however, is that it continues to simply react to identified threats and vulnerabilities. After Richard Reid (also known as Abdul Raheem) attempted to detonate a bomb hidden in his shoes on December 22, 2001, the TSA began screening all footwear at security checkpoints.¹³ Similar action was taken to ban all liquids, gels, and aerosols larger than three ounces following the 2006 arrest of a group of British radical Islamist terrorists, who had planned to use liquid explosives they would mix once on board an aircraft.¹⁴ These instances demonstrate that airline security remains vulnerable and that terrorists will keep on innovating and will strike even where the government applies considerable effort at protection. The United States needs not just reactive but proactive policies that seek to reinforce those areas of potential weakness that terrorists might exploit.

For example, while a considerable amount of money has been invested in measures to ensure the internal security of planes, commercial aircraft remain vulnerable to external attacks, especially from shoulder-fired missiles.¹⁵ Also known as MANPADS (man-portable air defense systems), these surface-to-air missile systems are widely available on the black market and are known to be in the possession of at least 27 terrorist groups.¹⁶ Al Qaeda nearly succeeded in downing an Israeli-operated commercial flight in Kenya in 2002 and has since grown more adept at employing these weapons in Iraq.¹⁷ With the hardening of airport security and terrorists' lingering obsession with high-profile attacks against commercial aircraft, the possibility of a MANPAD attack being attempted in the near future remains extremely high.

⁹ James Chow et al., *Protecting Commercial Aviation Against the Shoulder-Fired Missile Threat* (Santa Monica, CA: RAND, 2005), 1, http://rand.org/pubs/occasional_papers/2005/RAND_OP106.pdf.

¹⁰ U.S. Department of Transportation, Bureau of Transportation Statistics, <http://www.transtats.bts.gov/>.

¹¹ The RAND Corporation estimated that the direct and indirect consequences of a one-week shutdown of the airline industry would result in an estimated loss of \$3 billion to the U.S. economy. See Jenkins, "International Terrorism," 16; Chow et al., *Protecting Commercial Aviation*, p. x.

¹² Brock N. Meeks, "For Air Marshals, Less Equals More," MSNBC, <http://www.msnbc.msn.com/id/6013001/> (posted September 15, 2004).

¹³ Greta Wodele, "TSA Revamping Shoe Screening Policy," *GovernmentExecutive.com*, August 8, 2005, <http://www.govexec.com/dailyfed/0805/080805cdpm1.htm>.

¹⁴ Alan Cowell and Dexter Filkins, "Terror Plot Foiled; Airports Quickly Clamp Down," *New York Times*, August 11, 2006.

¹⁵ According to a U.S. government estimate, there are 6,000 MANPADS currently outside the control of state governments. Douglas Jehl and David E. Sanger, "U.S. Expands List of Lost Missiles," *New York Times*, November 6, 2004.

¹⁶ James Whitmire, "Shoulder Launched Missiles: The Ominous Threat to Commercial Aviation," (Maxwell AFB, Alabama: USAF Counterproliferation Center, 2006), 3.

¹⁷ Dana Priest and Bradley Graham, "Missing Anti-Aircraft Missiles Alarms Aides," *Washington Post*, November 7, 2004.

Maritime Security

Besides being America's first line of defense, maritime security also exemplifies the international nature of homeland security. An effective defense of the homeland must incorporate a strategy that can successfully intercept America's enemies abroad, while also providing the ability to stop threats at its shores.

The U.S. Navy's ability to project power across the globe serves as a major deterrent to states that might consider attacking the homeland directly, and gives pause to countries considering support for terrorist organizations that would target the United States. In pursuit of such deterrence, the Navy typically has around one-third of its ships forward-deployed on missions to promote stability and engage potential adversaries abroad.¹⁸ Given that these ships visibly project American power throughout the world's seas and littorals, it is no surprise that al Qaeda chose to target the USS *Cole* off the coast of Yemen in October 2000.

The Navy conducts operations to secure sea lines of communication (SLOCs) worldwide that make possible the free flow of commerce. Maritime interdiction operations are conducted in foreign waters in order to catch and deter terrorists from exploiting international waterways before they reach America's shores. Closer to home, the Navy employs its sophisticated technology and fast vessels to aid the U.S. Coast Guard in its efforts to stem the flow of illegal drugs entering the United States. According to one former Chief of Naval Operations, Admiral Vern Clark, the responsibility for maritime security "should rest first and foremost with the United States Coast Guard."¹⁹ However, as the maritime threat has expanded, coordination and resource sharing between the services have become increasingly important.²⁰

The Coast Guard is charged with the difficult task of patrolling more than 12,000 miles of America's coastline.²¹ Despite employing just over 40,000 men and women,²² they were able to interdict 6,412 illegal immigrants²³ and nearly 250,000 tons of drugs in 2007 alone.²⁴ In 2005, the Coast Guard also played a critical lifesaving role in responding to Hurricanes Katrina and Rita.

The U.S. Coast Guard is currently working in close conjunction with the U.S. Navy to attain maritime domain awareness (MDA)—the accurate tracking of all vessels in U.S. territorial waters—for the strategic defense of the United States. Although for many years the Navy has had MDA surrounding its carrier groups, it is now working with the Coast Guard to merge and disseminate threat data collected by the military, federal agencies, international partners, and commercial groups in order to generate actionable intelligence in defense of the homeland.²⁵

¹⁸ Commander Michael Dobbs, "Homeland Security... From the Sea," *Journal of the Royal United Services Institute for Defense Studies* 147, no. 4 (August 2002): 2.

¹⁹ *Ibid.*, 4.

²⁰ Several Navy Cyclone-class patrol craft are on loan to the U.S. Coast Guard. See Michael Dobbs, "Homeland Security... From the Sea," in *The Journal of the Royal United Services Institute for Defense Studies* 147, no. 4 (August 2002):4.

²¹ CIA World Factbook, "United States," <https://www.cia.gov/library/publications/the-world-factbook/geos/us.html>.

²² U.S. Coast Guard, "About Us," <http://www.uscg.mil/top/about/>.

²³ U.S. Coast Guard, "Alien Migrant Interdiction: Total Interdictions CY 82 to Present," www.uscg.mil/hq/g-o/g-opl/AMIO/FlowStats/CY.htm.

²⁴ U.S. Coast Guard, www.uscg.mil/hq/g-o/g-opl/Drugs?statswww.htm.

²⁵ "Maritime Domain Awareness," *GlobalSecurity.org*, <http://www.globalsecurity.org/intell/systems/mda.htm>

Container Security

Container security is a component of maritime security, but it is so complex that it requires separate treatment. Currently, 95 percent of the cargo entering the United States each year comes by sea—a total of just over 11 million containers in 2005.²⁶ Because of this large volume and the supply chain demands of American businesses, the Department of Homeland Security is able to inspect only about 5 percent of all cargo entering the country.²⁷ For this reason, many security experts have referred to shipping containers as a “modern-day Trojan horse” in which terrorist operatives may smuggle CBRN weapons, arms, explosives, and personnel.²⁸ Al Qaeda training manuals seized in the United Kingdom reveal that terrorists have targeted smugglers for recruitment, as they possess the requisite knowledge to exploit vulnerabilities in the global container system.²⁹

In 2003, the U.S. National Nuclear Security Administration (NNSA) began the Megaports Initiative, which is intended to enhance the ability of other countries to screen cargo at major international seaports. Through this initiative, the NNSA provides participating nations with equipment and training to detect radiological substances. In exchange for this aid, foreign governments agree to share their data on the detection and seizure of radioactive material with the NNSA. Six countries are currently participating in the Megaports initiative, with 13 more working toward implementing it.³⁰ In 2002, U.S. Customs and Border Protection had set up a similar program, known as the Container Security Initiative (CSI).³¹ Under this agreement, cooperating countries scan cargo before it is loaded aboard shipping vessels, thereby “extending the [U.S.] zone of security outward, so that American seaports and borders become the last line of defense, not the first.”³²

It is not enough to have security measures in place once containers reach U.S. borders. Terrorists are very likely to protect their cargo from detection with false documentation or shielding devices built to elude radiological or biological sensors. In addition, the security measures in place on container ships to ensure that cargo is not tampered with while en route are inadequate. Many in the private sector fear that

²⁶ Department of Homeland Security, “Audit of Targeting Oceangoing Cargo Containers,” http://www.dhs.gov/xoig/assets/mgmt/rpts/OIG_07-09_Nov06.pdf (posted November 2006).

²⁷ U.S. Customs and Border Protection, “Maritime Cargo Security in the Age of Global Terrorism,” http://www.cbp.gov/xp/cgov/newsroom/full_text_articles/trade_prog_initiatives/cargo_security.xml (posted January 2007).

²⁸ In October of 2001, an Egyptian named Farid Rizk was discovered inside a container that had departed from Port Said, Egypt, and arrived in Italy. Also found in his possession were Canadian passports, maps, cell phones, a laptop, and Thai airline security passes. See U.S. Customs and Border Protection, “Maritime Cargo Security in the Age of Global Terrorism,” http://www.cbp.gov/xp/cgov/newsroom/full_text_articles/trade_prog_initiatives/cargo_security.xml (posted January 2007).

²⁹ U.S. Senate, 108th Congress, Committee on Governmental Affairs, “Cargo Containers: The Next Terrorist Target,” (March 20, 2003): 2.

³⁰ National Nuclear Security Administration, “Megaports Initiative,” http://www.nnsa.doe.gov/megaports_initiative.htm.

³¹ U.S. Customs and Border Protection, “Container Security Initiative Fact Sheet,” http://www.customs.treas.gov/linkhandler/cgov/border_security/international_activities/csi/csi_fact_sheet.ctt/csi_fact_sheet.doc.

³² Former Secretary of Homeland Security Tom Ridge, “Remarks by Secretary Ridge at the Port of Newark, New Jersey,” (Speech Given in Newark, New Jersey on June 13, 2003), http://www.dhs.gov/xnews/speeches/speech_0118.shtm.

heightened levels of security will harm the U.S. economy. However, the negative economic effects typically associated with additional screening should be compared to the potential cost to the United States of the detonation in a U.S. port of even one radiological device, let alone a nuclear weapon. As the National Strategy for Maritime Security makes clear,

[T]he adoption of a just-in-time delivery approach to shipping by most industries, rather than stockpiling or maintaining operating reserves of energy, raw materials, and key components, means that a disruption or slowing of the flow of almost any item can have widespread implications for the overall market, as well as upon the national economy.³³

Preventing Nuclear Terrorist Attack

The most catastrophic scenario involving terrorist exploitation of the global container system would involve a sophisticated terrorist network such as al Qaeda smuggling in a low- to medium-yield nuclear weapon to be detonated in a large metropolitan area. The use of such a weapon in a highly populated area not only would result in far greater casualties than the 9/11 attacks but would have ruinous economic and psychological effects on American society. In 2006, RAND conducted an analysis of the immediate effects of a terrorist detonation of a 10-kiloton nuclear weapon in the Port of Long Beach. The study concluded that approximately 60,000 people would die instantly, while 150,000 more might suffer health effects caused by the absorption of high levels of radiation.³⁴ The early costs of such an attack would likely exceed \$1 trillion.³⁵ Its long-term economic implications are difficult to predict, but it could seriously damage the U.S. and global economies—perhaps sending both into recession or even depression. The fragile “just in time” global supply chain and international trade would also be brought to at least a temporary halt.

Highly enriched uranium does not emit a great deal of radiation, especially if it is transported in small quantities or in a shielded container. Thus, the likelihood is relatively low that a small nuclear weapon would be detected by radiological scanners at either the ports or the borders.³⁶ Once a nuclear device has entered the country, the chances of discovery further diminish, as even if the bomb were to pass through a city that has installed radiation detectors in key areas, the device would still likely be shielded so that its radiation would not leak out.

Ultimately, the responsibility for preventing a nuclear attack rests with the forward operating components of the intelligence and defense communities who are capable of stopping the threat—relying on internationally cooperative customs inspections and interdiction operations—before it reaches the United States’ borders. Domestic homeland security efforts must focus on detection while simultaneously planning for catastrophe management should a nuclear attack occur.

³³ The White House, “National Strategy for Maritime Security,” September, 2005, <http://www.whitehouse.gov/homeland/4844-nsms.pdf>.

³⁴ Charles Meade and Roger C. Molander, *Considering the Effects of a Catastrophic Terrorist Attack* (Santa Monica, CA: RAND, 2006), 46.

³⁵ *Ibid.*, 18.

³⁶ Joe Fiorill, “Experts Question U.S. Emphasis on Nuclear Weapon Detection,” *Global Security Newswire*, June 8, 2005, http://www.nti.org/d_newswire/issues/print.asp?story_id=82E8A0AB-2EAA-4D06-86E8-360DE844D5E9.

Biosecurity

Although the source of the 2001 anthrax letters remains unknown, their existence strongly suggests that terrorists are willing to carry out biological attacks and may seek further capabilities in this area. To be sure, these attacks involved a relatively small amount of *Bacillus anthracis*, but the bacterium was nonetheless of a pure form—causing the death of 5 people and infecting 17 others.³⁷ Huge economic damage was also inflicted; the FBI estimated the cost of cleanup at more than \$1 billion.³⁸ If terrorists possess the skills to produce high-purity anthrax, there is no reason to believe that they are not also capable of engineering other deadly substances such as tularemia, botulism, and ricin. Some state governments have taken proactive measures to install biological detectors in key areas throughout their cities in order to provide early warning of these deadly substances, but seven states still lack the capability to test for biological threats.³⁹

The Department of Health and Human Services (HHS) predicts that a severe pandemic could result in 1.9 million deaths and 9.9 million hospitalizations in the United States.⁴⁰ According to the World Health Organization (WHO), the “bird flu” virus (H5N1) has met every prerequisite for a virus capable of creating a pandemic except the ability to spread efficiently among humans.⁴¹ However, there are signs that the virus is mutating, as countries around the world (particularly in Southeast Asia) have reported more than 353 cases since 2003.⁴² Recent studies have concluded that the U.S. government is not adequately prepared to respond to a pandemic influenza outbreak. Most notably, the National Pandemic Influenza Strategy has yet to define clear leadership roles. The following are some of the most immediate concerns about pandemic response outlined by the Trust for America’s Health, a nonprofit, nonpartisan health research organization:

- Thirteen states do not have adequate plans to distribute emergency vaccines and antidotes from the Strategic National Stockpile (SNS).
- Seven states have not purchased any portion of their federally subsidized antiviral medications.
- The federal government has stockpiled only 6,000 treatment courses of pediatric influenza antiviral medication; in 2007, 73.6 million children were living in the United States.⁴³

Though U.S. agriculture is not typically seen as a high-value terrorist target, many analysts are starting to pay attention to the possibility that terrorists might view agro-terrorism as a low-cost, high-efficiency way to severely damage the U.S. economy. The threat is very real: nine countries are known to

³⁷ Tom Daschle, “The Unsolved Case of Anthrax,” *Washington Post*, October 15, 2006.

³⁸ Allan Lengel, “Little Progress in FBI Probe of Anthrax Attacks,” *Washington Post*, September 16, 2005.

³⁹ “Ready or Not? Protecting the Public’s Health from Diseases, Disasters, and Bioterrorism,” *The Trust for America’s Health*, (2007): 11.

⁴⁰ *Ibid.*, 11.

⁴¹ World Health Organization, “Avian Influenza (Bird Flu) Fact Sheet,”

http://www.who.int/mediacentre/factsheets/avian_influenza/en/ (posted February 2006).

⁴² World Health Organization, “Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO,”

http://www.who.int/csr/disease/avian_influenza/country/cases_table_2008_01_24/en/index.html (posted 24 January 2008).

⁴³ *Ready or Not? Protecting the Public’s Health from Diseases, Disasters, and Bioterrorism* (Washington, DC: Trust for America’s Health, 2007), 3, <http://healthyamericans.org/reports/bioterror07/BioTerrorReport2007.pdf>.

have already developed agricultural bioweapons programs.⁴⁴ Farming may employ only 2 percent of U.S. workers, but 16 percent of the U.S. workforce is directly tied to the food and fiber sector. In 2002, this sector contributed \$1.2 trillion to the U.S. economy, constituting 11 percent of the nation's GDP.⁴⁵ An attack on the U.S. agricultural sector would do the added damage of raising the cost of food worldwide and perhaps decreasing the value of land in the United States.⁴⁶ It is believed that groups such as al Qaeda have at the very least considered attacking the U.S. agricultural sector; in 2002, manuals describing how to manufacture animal and plant poisons were discovered in terrorist safe houses in Afghanistan.⁴⁷ The technical know-how and hardware required to perpetrate a mass act of agro-terrorism are already widely available.

Natural Disasters

Unlike terrorist attacks, natural disasters are guaranteed to occur fairly regularly and with varying degrees of severity. Although some security experts view dealing with natural disasters as solely a state-level responsibility, Hurricane Katrina exemplified what can happen when local governments are incapacitated and the federal government is not prepared or empowered to assert control.⁴⁸ Much of the confusion associated with the federal government's failed response to Hurricane Katrina can be blamed on the lack of integration and clear lines of authority within the Department of Homeland Security, which was formed in 2002 by combining 22 government agencies. It is open to debate whether these problems have been adequately resolved.

Hurricane Katrina illustrated the clear need for both legislative and interagency reform that would empower the federal government to do what is necessary to respond to catastrophes when they occur. In its 2008 final report to Congress, the Commission on the National Guard and Reserves stated that "responding to natural and man-made disasters in the homeland is a core competency of DoD, of equal importance to its combat responsibilities."⁴⁹ In this area, the Commission's report made recommendations similar to those of several other independent studies, which also acknowledged the need for DoD to plan for scenarios in which it would be forced to take the lead in disaster response until such time as state and local governments are capable of resuming control.⁵⁰

⁴⁴ Canada, France, Germany, Iraq, Japan, South Africa, United Kingdom, United States, and the former USSR all developed agricultural bioweapons programs at some point of the 20th century. Egypt, Rhodesia, North Korea, and Syria are also believed to have had similar secret programs. Jim Monke, "Agroterrorism: Threats and Preparedness," CRS Report RL32521(Updated March 12, 2007), 1.

⁴⁵ Ibid., 5.

⁴⁶ Ibid., 6.

⁴⁷ Ibid., 1.

⁴⁸ A number of homeland security experts believe that states should bear the lion's share of the responsibility for dealing with natural disasters; See James Jay Carafano, "New Homeland Security Strategy Misses the Mark," Heritage Foundation WebMemo #1659, October 10, 2007, <http://www.heritage.org/Research/HomelandDefense/wm1659.cfm>.

⁴⁹ Commission on the National Guard and Reserves, *Transforming the National Guard and Reserves into a 21st-Century Operational Force*, (Arlington, VA: Commission on the National Guard and Reserves, 2008), 14.

⁵⁰ Both the CSIS *Beyond Goldwater-Nichols Phase II Report*, (Washington, DC: Center for Strategic & International Studies, 2005) on U.S. Government Reform and the CSIS *Beyond Goldwater-Nichols Phase III Report* (Washington, DC: Center for Strategic & International Studies, 2006) on the Future of the National Guard and Reserves made very similar recommendations in regards to the DOD's role in homeland defense. Christine Wormuth and Anne Witkowsky's *Beyond Goldwater-Nichols Phase 4 Report*, (Washington, DC: Center for Strategic & International Studies, 2008) is currently pending publication but will also make similar recommendations.

The successful response to the California wildfires in 2007 demonstrated how state and federal authorities can work together effectively during a natural disaster. In that case, preexisting mutual aid agreements enabled the U.S. military to quickly mobilize air and ground forces to provide the state government with material support without being delayed by the usual bureaucratic roadblocks.⁵¹ However, in the future, states must plan for truly catastrophic events, and prepare to enact chains of command and authority that will save the greatest number of lives—not simply maintain existing bureaucratic lanes and hierarchies.

Mass Transit Security

With the exception of air travel, the federal government has largely ignored the threat that terrorists pose to the U.S. transportation infrastructure, even though in recent years more than a third of all terrorist attacks worldwide have been aimed at mass transit systems.⁵² Between 1995 and 2005, more than 250 terrorist attacks were launched across the globe against rail targets, resulting in nearly 900 deaths and over 6,000 injuries.⁵³ The Madrid bombings in 2004 killed 191 people and wounded 1900 others.⁵⁴ Today, the TSA focuses almost exclusively on aviation security, spending an average of \$9 per air passenger and only one penny for every rail and mass transit passenger.⁵⁵

An attack on any mass transit system in the United States would have a major impact on the weekday commutes of 11.3 million Americans in 35 metropolitan areas.⁵⁶ Although mass transit systems do not provide the same shock value as al Qaeda's previous U.S. targets, their ubiquity and general lack of security make them prime objectives for attacks. In New York, for example, nearly half of the 468 subway stations and every one of the 6,182 subway cars are without security cameras.⁵⁷ By comparison, London, a city that has experienced mass transit attacks, has more than 5,000 cameras operating in its subway system, as well as precise evacuation plans for every station.⁵⁸

Border Security

The lack of security along the borders of the United States poses a serious threat to the nation's security. The United States shares approximately 6,000 miles of border with Mexico and Canada, over which an estimated 500,000 illegal immigrants cross each year (the vast majority from Mexico).⁵⁹ While the size of the U.S. Border Patrol tripled between 1990 and 2005, the number of illegal immigrants entering the

⁵¹ Robert Brodsky, "Procurement Officials Were Well Prepared to Award Wildfire Contracts," *Government Executive*, (November 2, 2007), <http://www.govexec.com/dailyfed/1107/110207rb1.htm>.

⁵² "Transportation Security: Federal Action Needed to Help Address Security Challenges," GAO, (June, 2003).

⁵³ Marie Tyler, "Derailing Terror," *Washington Times*, August 3, 2006.

⁵⁴ Javier Jordan and Robert Wesley, "The Madrid Attacks: Results of Investigations Two Years Later," *Jamestown Foundation Terrorism Monitor* 4, no. 5 (March 6, 2006), <http://jamestown.org/terrorism/news/article.php?articleid=2369921>.

⁵⁵ House Committee on Homeland Security, *Detour Ahead: Critical Vulnerabilities in America's Rail and Mass Transit Programs*, 110 Cong., 1st sess., June, 2006.

⁵⁶ *Ibid.*, 13.

⁵⁷ Sewell Chan, "U.S. Transit Agencies Turn to Cameras in Terror Fight, but Systems Vary in Effectiveness," *New York Times*, July 14, 2005.

⁵⁸ House Committee on Homeland Security, "Detour Ahead: Critical Vulnerabilities in America's Rail and Mass Transit Programs," (2006): 8.

⁵⁹ James Jay Carafano, *Heritage at the Border: Ideas That Make a Difference*, (Washington, DC: Heritage Foundation, 2007), 1.

United States doubled during this same period.⁶⁰ The federal government has responded again by recently hiring an additional 2,000 border agents.⁶¹ Yet though this increase in manpower is likely to cut down on the number of people illegally crossing the border from Mexico, studies have shown that it is likely to slow the flow of illegal immigrants returning across the border to Mexico as well.⁶² The fact that many illegal immigrants do eventually return home is a point that has been lost as the issue has become politicized, and this return migration is little understood. According to criminology studies, deploying law enforcement personnel more strategically has proven to be a more effective measure than simply increasing their numbers.⁶³

Although the Secure Fence Act of 2006 calls for fences to be built along the Mexican border, huge sections along the frontier with Texas remain completely open to illegal border crossings.⁶⁴ An effective border strategy not only must employ physical barriers to entry but must also be backed by consistent internal enforcement aimed at making illegal immigration less appealing and more difficult to get away with than it is now. The lack of sanctions for those who illegally enter the United States markedly decreases the combined deterrent effects of fences and border agents. A more systemic approach to countering illegal immigration should be taken, one that includes diplomacy with Mexico as well as continuing to assist that country in its economic development.

Recent improvements in methods of identifying and monitoring people entering the United States through official ports, including the greater use of fingerprinting and biometrics, has made it more likely that in the future, terrorists and criminals will seek to enter the country through the many unofficial points of entry. Employing unmanned aerial vehicles (UAVs) to help monitor larger sections of the border is an encouraging start in federal efforts to identify the weakest points in the nation's border security.⁶⁵ Effective border security policy must also extend beyond the U.S. borders and lead to improvements in the security procedures of neighboring countries. If these nations were to significantly upgrade their security screening, they could help provide an additional deterrent to terrorists planning to enter the United States.

Sealing Major Trafficking Corridors

Even though nearly \$13 billion has been allocated in fiscal year 2008 for federal drug control policies, the flow of illegal narcotics entering the United States remains quite high.⁶⁶ Drug abuse in the United States

⁶⁰ Dan Restrepo and PJ Crowley, *Refocusing Border Efforts* (Washington, DC: *Center for American Progress*, 2007): 1.

⁶¹ House Homeland Security Committee, *Border Security and the Terrorist Threat: Hearing before Subcommittee on Economic Security, Infrastructure Protection, and Cybersecurity, Subcommittee on Emergency Preparedness, Science, and Technology*, 110th Cong., 1st sess., 2006, http://rand.org/pubs/testimonies/2006/RAND_CT266.pdf, (Statement by Jack Riley, RAND Corporation).

⁶² James Jay Carafano, "Beyond the Border," (Washington, DC: *Heritage Foundation*, 2006): 1.

⁶³ David B. Muhlhausen, *Building a Better Border: What the Experts Say*, (Washington, DC: *Heritage Foundation*, 2006): 9.

⁶⁴ Public Law 109-367, *The Secure Fence Act of 2006*, October 26, 2006.

⁶⁵ Department of Homeland Security, "Fact Sheet: Secure Border Initiative," http://www.dhs.gov/xnews/releases/press_release_0794.shtm (posted November 2, 2005).

⁶⁶ Office of National Drug Control Policy, *FY2008 Drug Control Budget* (2007): 1.

is a serious problem, resulting in at least 20,000 deaths in 2004⁶⁷ and an average loss in productivity of \$14 billion annually.⁶⁸

The Drug Enforcement Agency (DEA) has had some success in recent years, making nearly 30,000 arrests and seizing almost 70,000 kilos of cocaine and 850 kilos of heroin in 2006.⁶⁹ According to the DEA, the threat posed by the Mexican trafficking organizations operating in the southwest United States extends far beyond the illegal drug trade.⁷⁰ Since 2003, law enforcement officials have noted a significant rise in the level of border violence, resulting mostly from conflict between the Gulf Cartel and its rival, known as “the Alliance.” Murders, kidnappings, and assaults on law enforcement have become increasingly common on both sides of the U.S.-Mexico border.⁷¹

Drug enforcement is yet another area of homeland security in which the United States has failed to match the innovation shown by its adversaries. While thousands of border agents search for drug mules crossing the border on foot and radar systems patrol the air for small planes, the cartels have instead turned to the seas. Over the past two years, the U.S. and Colombian navies have captured more than 18 homemade fiberglass submarines capable of transporting 3 to 12 tons of cocaine each.⁷² Drug trafficking is simply too profitable to be effectively deterred at the point of entry: greater offensive measures must thus be taken against the suppliers themselves.

Protecting Critical Infrastructure

According to the 2002 National Strategy for Homeland Security, “protecting America’s critical infrastructure and key assets will not only make us more secure from terrorist attack, but will also reduce our vulnerability to natural disasters, organized crime, and computer hackers.”⁷³ The consequences of the destruction of an oil refinery or chemical plant would be second only to a large-scale nuclear or biological attack. The natural deterioration of much of the nation’s infrastructure has publicly demonstrated the vulnerability of many of these facilities. The likelihood of an attack against a chemical plant or refinery is further increased by the experience that terrorists have gained in targeting these facilities in Iraq. The

⁶⁷ Because the process of completing, collecting, correcting, and computerizing 2.4 million death certificates annually is laborious and time-consuming, final data on the incidents of drug-induced deaths are available only through 2004. Center for Disease Control, “CDC Congressional Testimony,” www.cdc.gov/washington/testimony/2007/t20071024.htm, (Posted October 24, 2007).

⁶⁸ National Institute on Drug Abuse, National Institute on Alcohol Abuse and Alcoholism, *The Economic Costs of Alcohol and Drug Abuse in the United States* (Rockville, MD: U.S. Department of Health and Human Services, 1998), <http://www.nida.nih.gov/EconomicCosts/Chapter1.html#1.10>.

⁶⁹ U.S. Drug Enforcement Administration, “2006 Successes in the Fight Against Drugs,” www.usdoj.gov/dea/statistics.html.

⁷⁰ U.S. Drug Enforcement Administration, “Drug Trafficking Organizations,” www.usdoj.gov/dea/concern/18862/dtos.htm.

⁷¹ The Alliance (aka the Federation) is a group composed of several Mexican drug cartels who share resources and trafficking routes. The Alliance was founded to compete with the Gulf Cartel. Lately, the two groups have been fighting over smuggling routes that run through Nuevo Laredo. See U.S. Drug Enforcement Administration, “Southwest Border Region Drug Transportation and Homeland Security Issues,” http://149.101.1.32/dea/concern/18862/southwest_border.htm.

⁷² “Cocaine Sub Sunk Off Columbia,” *Coast Guard News*, <http://coastguardnews.com/cocaine-sub-sunk-off-columbia/2008/01/03/>, (posted January 3, 2008).

⁷³ *National Strategy for Homeland Security* ([Washington, DC: Office of Homeland Security], 2002), ix.

Environmental Protection Agency currently lists 121 such facilities that, because of their location, potentially endanger the lives of more than 1 million people.⁷⁴

To secure the vital infrastructure of the United States, it is necessary to fashion enduring partnerships between the federal government and the private sector, which currently controls more than 85 percent of the nation's infrastructure.⁷⁵ Encouraging private industry to employ inherently safer technology would greatly decrease the threat posed to the general population from terrorism as well as industrial accidents. Enacting legislation "to ensure that 'bad actors' within the industry are brought into compliance" has been strongly backed by the American Chemical Council, the industry's main lobbying group, which agrees that the risks are too great to allow chemical plant security to go unregulated.⁷⁶

The outrage expressed by the American people following the destruction of the levees in New Orleans and the collapse of a bridge over the Mississippi River in Minneapolis reflected the perception that these tragedies were largely avoidable. It is likely that Hurricane Katrina would have caused a great deal of damage regardless of the condition of the levees; however, it was the uncoordinated, seemingly haphazard response to their destruction that truly shocked America. In the case of the I-35W bridge, the government took no action to address the danger despite the fact that the structure had been repeatedly labeled as "structurally deficient" in previous years inspections.⁷⁷ The federal government cannot reasonably be expected to anticipate and thwart every possible terrorist threat; however, it can be expected to take measures to guard the population against threats that are in plain sight, whether natural or man-made.

Cyber Security

The Internet is at the core of the United States' critical infrastructure and is increasingly a vital part of everyday life. The U.S. government is already repelling cyber attacks on a daily basis. In an average year, the Pentagon suffers nearly 80,000 computer network attacks. A successful cyber attack can unleash viruses, corrupt data, crash vital networks, steal classified information, and interfere with command, control, navigation, and communication equipment.⁷⁸ According to Major General William Lord of the Air Force Office of Warfighting Integration, China has already downloaded 10–20 terabytes of data from DoD's NIPRNET (Non-Secure Internet Protocol Router Network, the unclassified Internet). Information technology experts such as James Mulvenon, director for intelligence analysis at Defense Group Inc., have also hypothesized that information warfare could be used to "degrade or even delay a deployment of [U.S.] forces to Taiwan" were it to come under attack by the Chinese.⁷⁹

U.S. and multinational businesses, too, are increasingly threatened by electronic espionage attacks, many of which apparently originate in China. In December 2007, the British intelligence service,

⁷⁴ Stephen Flynn, "The Next Attack," *Washington Monthly*, March 2007: 7.

⁷⁵ The White House, "NSIS—Sharing Information with the Private Sector," <http://www.whitehouse.gov/nsc/infosharing/sectionV.html>.

⁷⁶ Alexandra Marks, "A Push for Safer Chemical Sites," *Christian Science Monitor*, December 13, 2005.

⁷⁷ Minnesota Department of Transportation, "Bridge 9340 Inspection Report," June 15, 2006 (Inspection Date), 1, http://www.dot.state.mn.us/i35wbridge/pdfs/bridge_inspection_report_06-15-06.pdf.

⁷⁸ Peter Brookes, "Countering the Art of Information Warfare," (Washington, DC: *Heritage Foundation*, October 15, 2007), <http://www.heritage.org/Press/Commentary/ed101607a.cfm>.

⁷⁹ Mulvenon is widely regarded as one of the premier experts on the Chinese military's use of information technology. See Dawn S. Onley and Patience Wait, "Red Storm Rising: DOD's Efforts to Stave Off Nation-State Cyberattacks Begins with China," *Government Computer News*, August 21, 2006: 1.

MI-5, alerted the top banking and business leaders in the United Kingdom of these attacks after several companies (including Rolls Royce) discovered viruses within their computer systems that were uploading corporate secrets to Internet servers traced to China.⁸⁰

Though cyber attacks are not likely to be the preferred weapon of terrorists, hackers were able to cripple the Estonian government for several days in May 2007 through a “denial of service attack.”⁸¹ The politically motivated strike was meant as a protest against the Estonian government’s decision to move a statue of a Soviet soldier.⁸² Whatever their motivation, these attacks have proven capable of interfering with the critical infrastructure on which U.S. society relies, and thus every precaution must be taken to defend against them.

Homegrown Terror

Homegrown extremism has recently become a pressing issue in Europe, where the past several terrorist attacks have been carried out by native-born and naturalized extremists.⁸³ Although the United States has yet to witness the same degree of domestic radicalization, it is not immune. Prior to the deadly attacks on September 11, 2001, the worst terrorist incident in U.S. history was perpetrated by Timothy McVeigh and Terry Nichols, members of a radical antigovernment militia who targeted the Alfred P. Murrah Federal Building in Oklahoma City with a 4,800-pound IED,⁸⁴ killing 161 people.⁸⁵ Islamist extremism has since become the focus of U.S. counterterrorism efforts, however, homegrown terrorists of other ideological persuasions remain a threat. These groups have demonstrated the capability and the will to perpetrate horrendous acts and have the advantage of not having to enter the United States undetected.

The threat of homegrown Islamist extremism in the United States also requires further study. The cases of John Walker Lindh, the American caught fighting for the Taliban in Afghanistan,⁸⁶ and Jose Padilla, the so-called dirty bomber,⁸⁷ may suggest that such indigenous terrorism is a credible threat, but the lack of other American Islamist terrorists indicates that they may in fact be anomalous and not precursors of more to come. A recent study conducted by the George Washington University Homeland Security Institute and the University of Virginia Critical Incident Analysis Group finds that “prisons provide an ideal environment for radicalization of young men and women.”⁸⁸ The researchers point to a variety of socioeconomic and psychological factors that make prisoners in the United States and Europe particularly susceptible to radical ideology, but they concede that only a minority of those who become

⁸⁰ John J. Tkacik, Jr., “Trojan Dragons: China’s International Cyber Warriors,” (Washington, DC: *Heritage Foundation*, 2007): 1.

⁸¹ A denial of service attack involves saturating the target (victim) machine with external communications requests to such an extent that it cannot respond to legitimate traffic, or responds so slowly as to be rendered effectively unavailable. See DHS, United States Computer Readiness Team, <http://www.us-cert.gov/cas/tips/ST04-015.html>.

⁸² James A. Lewis, “Cyber Attacks Explained,” (Washington, DC: *CSIS*, 2007): 1.

⁸³ On July 7, 2005, Hasib Mir Hussain, Shehzad Tanweer, Germaine Lindsay, and Mohammad Sidique Khan detonated three bombs in London subway cars and one on a double-decker bus. Germaine Lindsay, who immigrated from Jamaica when he was five, was the only member of the cell not to have been born in the United Kingdom. Similarly, Dr. Bilal Abdullah, born in the United Kingdom, attacked the Glasgow airport in his sport utility vehicle rigged with explosives on June 30, 2007.

⁸⁴ John Kifner, “With a Roar, A Wound is Closed in Oklahoma City,” *New York Times*, May 24, 1995.

⁸⁵ Jo Thomas, “For First Time, Woman Says McVeigh Told of Bomb Plan,” *New York Times*, April 30, 1997.

⁸⁶ Josh Tyrangiel, “The Taliban Next Door,” *Time*, December 9, 2001.

⁸⁷ Deborah Sontag, “Terror Suspect’s Path from Streets to Brig,” *New York Times*, April 25, 2004.

⁸⁸ *Out of the Shadows: Getting Ahead of Prisoner Radicalization*, (Washington DC: George Washington University Homeland Security Policy Institute and the University of Virginia Critical Incident Analysis Group, 2007), 1.

radicalized actually go on to actively pursue terrorism.⁸⁹ Ultimately, the paucity of research on prison radicalization, together with the knowledge that around the world many former prisoners have begun their careers as terrorists following their incarceration, indicates that further study of the issue is needed.

Final Thoughts

Homeland security is incredibly complex and necessarily touches the heart of the American way of life: our society prospers because it is open and free, and yet protecting our society poses a challenge to its openness and freedom. The American people must thus come to a consensus on whether and to what degree they are willing to relinquish civil liberties for the sake of security. At the same time, the various agencies responsible for homeland security must come to an agreement about what areas of security fall under their particular purview and must ultimately decide on a clearly defined hierarchy for operations.

Hurricane Katrina exposed the immense bureaucratic problems inherent within DHS, while also demonstrating the inability of federal, state, and local authorities to effectively work together in times of crisis. That the roles and missions assigned to DHS, DoD, and the Federal Emergency Management Agency have not been clearly defined is largely to blame for the government's inability to adequately respond to catastrophic events. For instance, Homeland Security Presidential Directive 5 explicitly designates the Secretary of Homeland Security as the federal coordinator for domestic incident management, yet the Post Katrina Emergency Management Reform Act of 2006 makes the FEMA Administrator the principal adviser to the President for emergency management.⁹⁰ These overlapping roles create a great deal of confusion among those responding to a disaster as to who is ultimately in charge. Further complicating matters is the continuing lack of clarity regarding DoD's role in catastrophic incident response. Although President Bush has acknowledged that challenges on the scale of Katrina will necessitate a "broader role for the armed forces,"⁹¹ no plan yet exists for how DoD and DHS would coordinate their efforts in the event of another catastrophe incident.

The 9/11 attacks forced policymakers to become more imaginative about possible future threats, but preventive strategies have remained more reactive than proactive. The tactics of terrorists are ever-evolving, and they rely on the inability of societies to adapt quickly. However, terrorism is not the only threat that will require policymakers to adapt their perceptions and strategies in the coming years. Natural disasters, pandemic diseases, and deteriorating critical infrastructure are all threats that are visible on the horizon. The next presidential administration will face numerous challenges at home and abroad—the most important of which will be prioritizing the myriad threats facing the nation, and clearly defining homeland security's role in the overall national security strategy of the United States.

⁸⁹ *Ibid.*, 5.

⁹⁰ Homeland Security Presidential Directive 5, "Subject: Management of Domestic Incidents" (February 28, 2003); 109th U.S. Congress, *Public Law 109-295 (Post Katrina Emergency Management Reform Act)*, (2006), Section 503 (4) (A).

⁹¹ President George W. Bush, "President Discusses Hurricane Relief in Address to the Nation" (speech given in New Orleans, Louisiana on September 15, 2005), <http://www.whitehouse.gov/news/releases/2005/09/20050915-8.html>.

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MITIGATE PROLIFERATION THREATS

PREVENT THE DEVELOPMENT, ACQUISITION, TRAFFICKING, AND USE OF NUCLEAR, CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL WEAPONS AND MATERIALS

THE AMOUNT OF RISK IN THE CHANGING PARADIGM REPRESENTS THE LIKELIHOOD OF STATE PROLIFERATION.

AREAS OF PROLIFERATION CONCERN

with Diverse Chemical, Biological, and Radiological Weapons

THREAT SPECTRUM

NEW NUCLEAR STATES AND REGIONAL PROLIFERATION

THE CHANGING PARADIGM: NEW PATTERNS OF PROLIFERATION

EXISTING ARSENALS EXCESS SUPPLY

INADVERTENTLY SECURED CBRN STOCKPILES IN REGIONAL STATES

EFFICACY OF THE INTERNATIONAL NONPROLIFERATION REGIME

SECURITY DILEMMA REMAINS?

NON-STATE ACTORS THE CHANGING FACE OF PROLIFERATION

"IF YOU WANT TO LOCK UP THE RISK TO THE WORLD, YOU HAVE TO LOCK UP THE RISK TO THE STATE."

NUCLEAR TERRORISM

Note: for purposes of display and use in the national security priorities dialogue, these posters should be printed in full color on paper of at least 17 x 11 inches (ANSI B, ledger/tabloid). High-quality, print-ready images are available for download at <http://www.csis.org/isp/bgn/dialogue/>.

MITIGATE PROLIFERATION THREATS

Prevent the Development, Acquisition, Trafficking, and Use of Nuclear, Chemical, Biological, and Radiological Weapons and Materials

- The visual layout of the poster:
 - The map displays drivers, trends, and wildcard events that shape the environment in which proliferation occurs.
 - The world map depicts areas of concern.
 - Indicates the presence of enriched nuclear material by country.
 - Categorizes the overall safety and security of that material in each country.
 - The map focuses on the risk of nuclear proliferation.
 - The main technical barrier to nuclear proliferation for both states and non-state actors is the production of weapons-usable fissile material.
 - It is difficult, though possible, for a state to avoid international detection while acquiring an indigenous fuel cycle capability.
 - Insecure stockpiles of fissile material pose the greatest risk for non-state acquisition.
 - Production of fissile material is beyond the technical capabilities and resources of non-state actors.
 - Globalization and the diffusion of information, technology, and materials have complicated efforts to track CBRN precursors for state or non-state programs.
 - Non-State CBRN Threat Spectrum: Comparing the probability, consequences, and likelihood of state involvement associated with use of each CBRN capability.
 - The x-axis: consequences of use (from societal disruption to mass destruction).
 - The y-axis: probability of use (from “possible” to “any day now”).
 - Shade of blue signifies the likelihood of state involvement, e.g., some state involvement is virtually guaranteed for nuclear weapons, but not necessary for the use of a radiological weapon.
 - Remaining boxes display existing and emerging challenges in controlling the spread of CBRN to new state and non-state actors.
- Non-State Actors & CBRN Terrorism
 - Recent trends, coupled with evidence that al Qaeda (AQ) has pursued CBRN, have reversed the assumption that non-state actors do not actively seek these weapons.
 - Reduced or nonexistent threshold for use makes the threat particularly acute.
 - Scenarios range from high probability of low-level chemical, biological, or radiological attack, with disproportionately large psychological consequences, to low probability of catastrophic nuclear or biological attack.

- Chemical Terrorism
 - 1994 and 1995 Tokyo attacks using sarin agents aroused fears of chemical terrorism and demonstrated destructive potential of the weapons.
 - Several AQ-related ricin plots thwarted in recent years.
- Bioterrorism
 - 2001 anthrax scare demonstrates the disproportionately large economic and psychological consequences that a small-scale bioterror attack can unleash.
 - Advances in biotechnology elevate the risk of new, more lethal pathogens and contribute to the diffusion of biological weapons (BW) precursor materials.
 - Threat assessments range from warnings of human extinction to experts who claim the threat to be gravely and deliberately exaggerated.
- Nuclear Terrorism: requires an operational device or sufficient quantities of fissile material to be stolen or received from state-controlled stockpiles.
 - Theft of an operational device.
 - Pakistan and Russia are the most likely sources.
 - Obstacles include security measures such as permissive action links (PALs), strong incentives for states to secure stockpiles (deterrence).
 - Theft of fissile material: most probable pathway.
 - More than 2,300 tons of weapons-usable fissile material is distributed across 40 states, enough to make over 200,000 nuclear weapons; the majority is unsafeguarded.
 - Highly-enriched uranium (HEU) is the most usable material for non-state actors. More than 128 facilities worldwide have over 20 kg of HEU on-site.
 - Russia and the FSU pose the greatest risk: at least 18 cases of smuggling from the FSU have been confirmed by the IAEA in the past decade.
 - Unemployed scientists from defunct or scaled-back state CBRN programs can transfer their know-how to states or to non-state actors.
- Radiological Terrorism
 - Includes attacks against nuclear facilities, releasing of large amounts of radioactivity, or the detonation of a radiological dispersal device (“dirty bomb”).
 - Several dirty bomb attacks by AQ and others have been foiled since 9/11.
- New Nuclear States and Regional Proliferation
 - The nature of deterrence is evolving in the post–Cold War security landscape.
 - “Many-on-many” alters the stability doctrine.
 - Will emerging nuclear states behave rationally?
 - Though deterrence may dissuade deliberate use, other threats from primitive, new arsenals include unauthorized or accidental use, theft, miscalculation, preemption, blackmail, emboldened aggression, wildfire proliferation, and loss of U.S. leadership.
 - Iran and North Korea are the most acute and immediate threats.
 - Depending on if and how those crises are resolved, the states most likely to pursue programs in the future are Egypt, Brazil, Iraq, Japan, Saudi Arabia, South Korea, Syria, Taiwan, and Turkey.
 - The situation is tenuous but the sky is not falling.

- The regime is the bedrock of international cooperative efforts and is a powerful inhibitor to new state acquisition.
 - An erosion of these norms would prompt a new security dilemma for states, ushering in a cascade of global proliferation.
 - A host of factors suggest that the coming years will be the litmus test of the regime:
 - Iran’s enrichment program and the fuel cycle challenge.
 - North Korea and the inability to prevent or respond to NPT withdrawal.
 - Surging demand for nuclear energy, which has strained the ability to balance Article IV with Articles I and II (the NPT “bargain”).
 - Increasing criticism from nonnuclear weapon states for:
 - Failure by the nuclear weapon states to abide by Article VI or ratify the Comprehensive Test Ban Treaty;
 - Lack of universality (Israeli, Indian, and Pakistani arsenals are tacitly accepted by U.S. policies);
 - “Nuclear apartheid” in selectively permitting certain states to develop weapons or technologies and denying it to others.
- Demand-Side Pressures
 - Scope of the proliferation challenge will be determined by the evolution of each state’s cost-benefit calculation when considering a nuclear weapons program.
 - Motivations include external security considerations, prestige, claims to regional or global leadership, domestic and scientific pressures, and negotiating power.
 - Because security is the overriding motivation, U.S.-engineered security arrangements can substantially reduce the perceived benefits.
 - States’ nuclear behavior is subject to influence.
 - The U.S. and its allies can use a mix of carrots and sticks—applied judiciously—to alter the states’ cost-benefit calculations.
 - Overuse of coercive instruments can insulate a regime from pressure and create perverse incentives that accelerate the program.
- Future Weapons of Mass Destruction
 - Historically, the exponential advance of technology has coincided with the development of new and previously unimaginable modes of annihilation.
 - There is “no reason to believe that the 21st century will be any less inventive.”
 - Convergence of globalization and technological evolution will gradually reduce the barriers to increasingly destructive weapons in the 21st century.
 - Nanotechnology and WMD.
 - A fourth-generation nuclear device based on initial confinement fusion: lower threshold to use, requires little or no fissile material.
 - Molecular nanotechnology that can multiple the destructive capacity of existing CBRN and conventional weapons.
 - The power of self-replication, which can exponentially amplify threats.
 - A dual-use dilemma: destructive technologies will almost certainly *also* have peaceful or defensive applications.

MITIGATE PROLIFERATION THREATS

Prevent the Development, Acquisition, Trafficking, and Use of Nuclear, Chemical, Biological, and Radiological Weapons and Materials

Katharine L. Mitchell & Jessica M. Yeats

New threats have arisen while the nuclear taboo has weakened. And it is not just a single factor in this new strategic landscape that gives pause. Rather, it is the accumulation of multiple factors and their interplay and mutual reinforcement that account for many of these new dangers. For instance, there have always been terrorist groups, but never before has there been the simultaneous concentration of terrorist groups, diffusion of bomb design information, and poorly secured or unaccounted for nuclear material from the former Soviet Union.

—Kurt Campbell, Bob Einhorn, and Mitchell Reiss, *The Nuclear Tipping Point* (2004)

The spread of chemical, biological, radiological, and nuclear (CBRN) weapons is perhaps the most serious national security concern facing the United States. This section of the report addresses a spectrum of emerging and existing challenges that will define the proliferation security environment of the coming decades. These challenges include the threat of non-state actors acquiring and using CBRN capabilities, the risk of new states acquiring nuclear weapons and the requisite technologies, the credibility of the nonproliferation regime, and the development of future weapons of mass destruction.

Non-State Actors and CBRN Terrorism

In the past, experts have questioned whether non-state actors were actively seeking CBRN capabilities. Richard Falkenrath notes four arguments that historically shaped their skepticism: inflicting mass casualties would not serve the objectives of non-state organizations; to the extent that mass destruction is desirable, it is also possible without CBRN weapons; the risk of detection, attribution, and reprisal deters potential state suppliers; and group leaders or members may harbor moral objections to using CBRN weapons and may prioritize self-preservation.¹ Today, Falkenrath argues that these constraints may no longer hold. The events of September 11, coupled with the infusion of apocalyptic ideology into terrorists' manifestos, have shattered the assumption that these groups merely seek low-casualty disruptions. Al Qaeda's documented pursuit of nuclear, radiological, chemical, and biological capabilities testifies to the increasing motivation of non-state actors to acquire CBRN weapons.²

¹ See Richard A. Falkenrath, Robert D. Newman, and Bradley A. Thayer, *America's Achilles' Heel: Nuclear, Biological, and Chemical Terrorism and Covert Attack* (Cambridge, MA: MIT Press, 1998).

² See Bruce Hoffman, "CBRN Terrorism Post-9/11," in *Weapons of Mass Destruction and Terrorism*, ed. Russell D. Howard and James J. F. Forest (New York: McGraw-Hill, 2007), 1–17

Because of minimal or absent barriers to use, the threat posed by the spread of CBRN capabilities to non-state actors is qualitatively different than nonconventional threats of the past. These weapons serve a range of security and politically driven objectives for nation-states; but non-state, sub-state, and supra-state actors lack the stage to advertise a nuclear blackmail threat and, as Linton Brooks observes, “deterrence is not yet a word in their vocabulary.” In noting their amply demonstrated “wanton disregard for the value of human life,” Brooks contends that these groups are *determined to use* the most destructive weapons available to them.³

Several global trends suggest that chemical and biological weapons (CBW), in particular, are increasingly available to such groups. The growth in international trade has made it easier to acquire dual-use items and has complicated efforts to monitor and track them. The diffusion of chemical and biological technology and related technical information (especially via the Internet) and the verification challenges posed by distinguishing civilian from military applications of dual-use items have contributed to the increasing futility of strategies aimed at denying supply. The increasing complexity, sophistication, and geographic span of the activities of non-state actors have further constrained the international community’s ability to monitor and counter the spread of sensitive materials.⁴

In the aftermath of 9/11, the possibility of a CBRN terrorist attack against the United States, previously “the unthinkable,” was elevated to an overriding national security preoccupation⁵ that extended the traditional bounds of deterrence to include preventive strikes on states sponsoring terrorism, as outlined in the 2002 National Security Strategy.⁶ However, as the revelations of intelligence failures in the wake of the 2003 invasion of Iraq demonstrate, identifying and countering state sponsors of CBRN terrorism is remarkably difficult.⁷

Al Qaeda is known to have actively pursued a CBW program, at the urging of its second-in-command, the physician-ideologue Ayman al-Zawahiri, who has claimed that “the destructive power of these [biological and chemical weapons] is no less than nuclear weapons.”⁸ Al Qaeda had an active CBW program in Afghanistan, code-named “curdled milk” (*Zabadi*), which included animal experimentation. It actively sought members with backgrounds in biology and chemistry, including Yazid Sufaat, a former member of the Malaysian military with a degree in biology who interacted with a number of the 9/11 hijackers and plotters.⁹

The prospect of non-state actors acquiring nuclear weapons presents a categorically different type of low probability, high magnitude threat. The consequences of successful acquisition of a nuclear weapon by a terrorist group would be much more catastrophic than a CBW attack (whose damage could

³ U.S. Congress, Senate Armed Services Committee, “Testimony of Linton F. Brooks to the Subcommittee on Emerging Threats and Capabilities of the Senate Armed Services Committee,” March 6, 2002, <http://bioterrorism.slu.edu/bt/official/congress/brooks030602.pdf>.

⁴ See Falkenrath, Newman, and Thayer, *America’s Achilles’ Heel*.

⁵ Ron Suskind, *The One Percent Doctrine: Deep Inside America’s Pursuit of Its Enemies Since 9/11* (New York: Simon & Schuster, 2006), 2.

⁶ *National Security Strategy of the United States of America* ([Washington, DC: The White House], 2002), 19.

⁷ Evidence suggests that although Iraq may have continued a low-level pursuit of WMD programs, it did not have links to non-state actors as the Bush administration charged. See Bob Woodward, *State of Denial: Bush at War Part III* (New York: Simon & Schuster, 2007), 216–17; see also Central Intelligence Agency, “Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD,” September 30, 2004.

⁸ Ayman al-Zawahiri, quoted in Lawrence Wright, *The Looming Tower: Al-Qaeda and the Road to 9/11* (New York: Vintage, 2007), 342–43.

⁹ Hoffman, “CBRN Terrorism Post-9/11,” 8.

be mitigated by recovery and remediation measures).¹⁰ But the technical complexities involved in procuring an operational and deliverable nuclear weapon, coupled with the relative effectiveness of international programs designed to prevent illicit nuclear-related transfers—as illustrated by the penetration of the A. Q. Khan network—raise questions about the likelihood that a non-state actor would succeed in acquiring one.

Chemical Weapons (CW) and Terrorism

The technology, materials, and expertise needed to produce CW are increasingly prevalent worldwide, owing in large part to the rapid growth of the chemical industry. Export control regimes, such as the Australia Group, pose substantial obstacles to the acquisition of chemical precursors and dual-use equipment, but globalization, CBRN black markets, and the increasing self-sufficiency of sub-state actors suggest that resource-rich, determined groups can ultimately subvert strategies aimed at denying supply. As the proliferation expert Brad Roberts observes, “Any state with a petrochemical or fertilizer industry can make chemical warfare agents.”¹¹ However, given the nearly universal adoption of the Chemical Weapons Convention, the effectiveness of programs to destroy CW stockpiles, and the decreasing utility (relative to other CBRN) of CW for the security of nation-states, the more salient CW proliferation threat now comes from non-state actors. Because only a very few terrorist groups have the resources and the organization to produce the significant quantities of chemical weapons agents required for even a small-scale attack, it is considered more likely that most terrorist groups would buy or steal commercially available chemicals such as chlorine or phosgene.

Successful attacks by groups like the Japan-based cult Aum Shinrikyo underscore the potential for CW attacks to inflict substantial casualties and mass hysteria. On June 27, 1994, the group utilized a refrigerated truck as a delivery device for a cloud of sarin that left seven dead and sent 500 others to hospitals.¹² On March 20, 1995, the group released the gas on the Tokyo subway, injuring 3,800 and killing 12. Fortunately, chemical weapons, particularly those most likely to be produced by terrorists, do not typically induce mass casualties. Even during World War I, which saw the most extensive use of chemical weapons in human history, CW accounted for only 5 percent of total casualties.¹³

Ricin, a highly toxic substance manufactured from castor beans, was detected in mail addressed to the White House, and again on Capitol Hill in November 2003.¹⁴ No deaths or sickness were reported. In February 2008, ricin was found in a Las Vegas hotel room after a man was hospitalized in critical condition, suffering from ricin poisoning. He appears to have been a lone actor who manufactured the poison following instructions in “anarchist-type” literature.¹⁵ Several other ricin plots related to al Qaeda have been thwarted in recent years.¹⁶ These experiences suggest that while strategies to deny the supply of these agents are difficult to implement, tactics that deny the aims an attacker seeks in using the agent

¹⁰See Jon B. Wolfsthal and Steve E. Biegun, “A Full-Court Press Against Nuclear Anarchy,” in *Bridging the Foreign Policy Divide*, ed. Derek Chollet, Tod Lindberg and David Shorr (New York: Routledge, 2007), 87.

¹¹Brad Roberts, “Between Panic and Complacency: Calibrating the Chemical and Biological Warfare Problem,” in *The Niche Threat: Detering the Use of Chemical and Biological Weapons*, ed. Stuart E. Johnson (Washington, DC: National Defense University Press, 1997), 15.

¹²For a full account of the attacks, see Kyle B. Olson, “Aum Shinrikyo: Once and Future Threat?” *Emerging Infectious Diseases* 5, no. 4 (1999), <http://www.cdc.gov/ncidod/EID/vol5no4/olson.htm>.

¹³Hoffman, “CBRN Terrorism Post-9/11,” 9.

¹⁴Richard Benedetto, “Secret Service investigated ricin quietly,” *USA Today*, February 4, 2004.

¹⁵Animesh Roul, “Ricin Scare in Las Vegas: Facts and Fiction,” Counterterrorism Blog (posted March 2, 2008), http://counterterrorismblog.org/2008/03/ricin_scare_in_las_vegas_facts.php.

¹⁶Hoffman, “CBRN Terrorism Post-9/11,” 10–12.

“gain denial or “defensive deterrence”¹⁷ and measures to boost the U.S. capability to respond to CW attacks can minimize the likelihood of their use.

Bioterrorism

Although experts differ on whether, in light of existing international norms and legal agreements, states will seek to develop and acquire biological weapons, they do agree that BW would be particularly and primarily attractive to terrorist groups and other non-state actors.¹⁸ With the increasing availability of inputs, technologies and materials with virtually indistinguishable legitimate medical applications, the bioterror threat is projected to gradually increase, commensurate with the growing hostility of non-state actors. Former Secretary of the Navy and bioterrorism expert Richard Danzig has observed that “[b]iological terrorism affords the possibility of repeated attack, undermining confidence and forcing ever-escalating investments of resources to achieve a modicum of defense.”¹⁹ The prospect, however remote, of a rapidly spreading, untreatable disease also effectively removes a ceiling from the conceivable level of destruction achieved by the use of BW, making the weapon attractive and the threat acute.²⁰

On September 18, 2001, and October 9, 2001, seven envelopes containing anthrax were sent to several sites in the eastern United States, including offices in the U.S. Capitol. Twenty-two infections and five deaths resulted, not just from the opening of these envelopes at their destinations but from the contamination caused by their movement through the U.S. mail system. The FBI’s inquiry into the events (code-named “Amerithrax”) has yielded no arrests, suggesting that those responsible are still at large. These attacks, and the indirect costs associated with them—the cleanup, the FBI investigation, and the production of new defensive technologies—have cost the United States billions of dollars.²¹

The revolution in biotechnology and the new potential that terrorists may use genetically engineered pathogens, especially those developed through the manipulation of Ebola or smallpox viruses, have heightened the sense of urgency in dealing with the bioterrorism threat.²² DNA can be purchased via the Internet and assembled into new strains or hybrids currently unknown to researchers. Detection, diagnosis, and treatment of infection by new pathogens would be extremely difficult, especially if a pathogen were engineered to resist existing vaccines. A British journal in 2005 contacted 12 online suppliers of genetic material and found that only 5 of the companies screened orders for possible applications to bioterrorism.²³ The openness with which these topics are discussed in many biotechnology publications contributes to the concern. Although the smallpox virus currently is known to exist only in two well-protected facilities in the United States and in Russia, it now may be possible to produce the virus from scratch.²⁴ It may even be possible for engineers to mask its identity by ensuring that the virus first produces non-smallpox symptoms that would delay an effective response.

¹⁷ For an explanation of “gain denial” see Jefferson McMahan, “Nuclear Deterrence and Future Generations” in *Nuclear Weapons and the Future of Humanity: The Fundamental Questions*, ed. Avner Cohen and Steven Lee (Rowman and Littlefield, 1986), 328.

¹⁸ Blatant violations of the 1972 Biological and Toxic Weapons Conventions (BWC) are widespread. The United States and Russia are among the most egregious violators. See Christopher Chyba and Alex Greninger, “Biotechnology and Bioterrorism: An Unprecedented World,” *Survival* 46, no. 2 (Summer 2004): 145.

¹⁹ Quoted in Fred Ikle, *Annihilation from Within: The Ultimate Threat to Nations* (New York: Columbia University Press, 2007), 35.

²⁰ John Steinbrunner, “Biological Weapons: A Plague upon All Houses,” *Foreign Policy*, no. 109 (Winter 1997/98): 85.

²¹ Leonard A. Cole, “The Anthrax Attacks” (paper presented to the Conference on Informatics in BioDefense and Counter-Terrorism, New Jersey Performing Arts Center, Newark, NJ, May 12, 2004), 50.

²² Joby Warrick, “Custom-Built Pathogens Raise Bioterror Fears,” *Washington Post*, July 31, 2006.

²³ *Ibid.*

²⁴ Chyba and Greninger, “Biotechnology and Bioterrorism,” 148–49.

Other experts, such as Milton Leitenberg, are skeptical of the apocalyptic rhetoric surrounding discussions of bioterror. Leitenberg suggests that the severity of the threat has been deliberately exaggerated to secure support for restrictive and cost-inefficient biodefense programs. Those calculating the bioterrorism threat often make unrealistic assumptions and disregard the knowledge and practice required to obtain the strains, handle the pathogens, manipulate characteristics, scale up production, and ultimately disperse significant amounts of biological agents. Leitenberg insists that there is “every reason to believe” that any use of a biological weapon by a non-state actor will involve unmodified, classical agents to which existing biodefense measures are capable of responding (as has hitherto been the case).²⁵ It is also important to distinguish between communicable pathogens (self-delivering but not targetable) and pathogens such as anthrax that would require sophisticated dissemination by aerosol to be highly lethal—a capability that is both relatively easy to detect and considered to be out of the reach of non-state actors.

Nevertheless, cases like the anthrax scare demonstrate the utility of biological weapons as a tool to hold populations hostage and instill mass hysteria—objectives certainly aligned with terrorist goals. The biological threat function therefore follows an inverse curve from the high probability of a low-level (but disruptive) attack to the low probability of a massively destructive attack. And whatever the precise probability of a catastrophic bioterrorism attack, the risk—barring new preventive and defensive measures—will gradually grow as trade barriers dissolve and medical technology advances.

Nuclear Terrorism

The findings of the 9/11 Commission underscore how nuclear terrorism has come to dominate the U.S. perception of its security environment in the years following the September 11 terrorist attacks: “The greatest danger of another catastrophic attack in the United States will materialize if the world’s most dangerous terrorists acquire the world’s most dangerous weapons[,] . . . [and] al Qaeda has tried to acquire or make nuclear weapons for at least ten years.”²⁶ The nuclear expert Graham Allison assesses the probability of a nuclear terrorist attack within the next decade to be greater than 50 percent. Former Secretary of Defense William Perry considers that estimate too low, and even the multibillionaire and investment sage Warren Buffett has concluded that nuclear terrorism is “inevitable.”²⁷ The nature of the threat also differs from that posed by CBW terrorism, because assistance from nation-state actors (with or without the consent of the leadership) is virtually mandatory. Because of the infrastructure, complex technology, and materials required to independently produce sufficient quantities of weapons-usable fissile material, and because most terrorist objectives can be satisfied without a self-sustaining program capable of producing multiple warheads, all realistic nuclear terrorism scenarios presume that materials or weapons will be diverted from state-sponsored programs.

Charles D. Ferguson and William C. Potter, in their seminal and comprehensive study of nuclear terrorism, have identified four broad types of nuclear or radiological attacks that non-state actors could realistically mount:²⁸

1. The theft and detonation of an intact nuclear weapon.

²⁵ Milton Leitenberg, “Assessing the Biological Weapons and Bioterrorism Threat,” U.S. Army War College, December 2005, 88–90.

²⁶ The Commission on *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States* (New York: Norton, 2004), 380.

²⁷ Graham Allison, Joseph Cirincione, William C. Potter, and John Mueller, “Symposium: Apocalypse When?” *National Interest*, November 12, 2007, <http://www.nationalinterest.org/Article.aspx?id=15998>.

²⁸ Charles D. Ferguson, William C. Potter, et al., *The Four Faces of Nuclear Terrorism* (Monterey, CA: Center for Nonproliferation Studies, 2004), 3.

2. The theft or purchase of fissile material leading to the fabrication and detonation of a crude nuclear weapon—an improvised nuclear device.
3. Attacks against or sabotage of nuclear facilities, in particular nuclear power plants, causing the release of large amounts of radioactivity.
4. The unauthorized acquisition of radioactive materials contributing to the fabrication and detonation of a radiological dispersal device—a “dirty bomb.”

Successful acquisition of a nuclear device by a non-state actor poses to many experts the preeminent national security threat. The lack of a “return address” renders the traditional deterrence doctrine close to irrelevant, and as the analyst Daniel Whiteneck finds, “an adversary that prefers escalation regardless of the consequences cannot be deterred.”²⁹ Preventive measures must therefore focus on the supply side. Modified deterrence tactics may also be effective, particularly those aimed at denying access and, depending on the mode of acquisition, at deterring suppliers. Each scenario will be described below.

Procurement of an operational device. To acquire an operational nuclear weapon, a terrorist group could steal a device, be provided one willingly by a state sponsor, or bribe military or political officials.³⁰ Russia, with more than 15,000 warheads in various states of security,³¹ and Pakistan, with an estimated 60 warheads and questionable command and control,³² are the two most likely sources of a weapon acquired by theft or bribery. In Russia, a handful of unaccounted-for “suitcase bombs” raise concern,³³ although Nunn-Lugar Comprehensive Threat Reduction programs have made substantial progress in securing downsized arsenals. In Pakistan, reports of internal instability inspire fear that the nuclear-armed regime is unraveling (e.g., two nuclear technicians “went missing” in mid-February 2008),³⁴ although senior Pakistani officials routinely deny allegations that the arsenal is insecure and U.S. Director of National Intelligence Mike McConnell testified in February 2008 that the political uncertainty in the country “has not seriously threatened the military’s control of the nuclear arsenal.”³⁵

Two other barriers reduce the risk of theft. First, to prevent unauthorized use, most devices are equipped with permissive action links (PALs) that require a code from a central command structure before they can be detonated. Second, the increasing capability of nuclear forensics to trace the source of materials—and the widely held perception that the United States would retaliate against that source—gives states a profound incentive to prevent their devices from falling into the wrong hands.

The risk of a state “sponsoring” nuclear terrorism is even less likely. Possible culprits include North Korea and, in the future, Iran. But these states would face an ever stronger deterrence-related disincentive and would be unlikely to voluntarily relinquish control to groups they often distrust. Furthermore, given the resources devoted to the program and the immense value placed by these regimes on the possession of nuclear weapons, the price tag may be out of reach for non state actors.

²⁹ Daniel Whiteneck, “Deterring Terrorists: Thoughts on a Framework,” *Washington Quarterly* 28, no. 3 (Summer 2005): 187.

³⁰ Center for Nonproliferation Studies, “WMD 411: Nuclear Terrorism,” Nuclear Threat Initiative (2006), http://www.nuclearthreatinitiative.com/f_wmd411/f1a6_4.html.

³¹ Robert S. Norris and Hans M. Kristensen, “Russian Nuclear Forces, 2006,” *Bulletin of the Atomic Scientists* 62, no. 2 (March/April 2006): 64–67.

³² Paul Kerr and Mary Beth Nitkin, “Pakistan’s Nuclear Weapons: Proliferation and Security Issues” Congressional Research Service Report RL34248 (Updated January 14, 2008).

³³ Nuclear Control Institute, “Nuclear Terrorism—How to Prevent It,” <http://www.nci.org/nci-nt.htm#theft>.

³⁴ “Pakistan Nuclear Staff Go Missing,” BBC News, February 12, 2008, http://news.bbc.co.uk/2/hi/south_asia/7240414.stm.

³⁵ McConnell, quoted in Peter Crail, “Pakistan Defends Nuke Security Amid Instability,” *Arms Control Today*, March 2008, http://www.armscontrol.org/act/2008_03/Pakistan.asp.

Procurement of fissile material. Because of the difficulties associated with stealing or purchasing an operational device, procuring sufficient quantities of fissile material and independently weaponizing is considered to be the most likely scenario for non-state acquisition of a nuclear weapon. Accumulating sufficient quantities of fissile material is the most technically challenging step in developing a nuclear weapon (weaponization instructions for basic gun-type nuclear device are readily available, and a broad range of terrorist objectives could be achieved without sophisticated delivery systems). The locus of the nuclear terrorism threat is thus the existence of vulnerable stockpiles and facilities that can produce weapons-grade highly enriched uranium (HEU) or plutonium.

Assuming a fairly sophisticated weapon design, a nuclear weapon can be produced from 25 kg of weapons-grade HEU (enriched to more than 90 percent U-235 composition) and 8 kg of weapons-grade plutonium (about 93 percent Pu-239, although reactor-grade plutonium could theoretically be used).³⁶ However, opinion is divided on whether terrorists could design the sophisticated plutonium-based weapon,³⁷ and the most basic uranium-based weapon requires up to 110 kg. More than 130 research reactors worldwide use HEU as fuel.³⁸ These research reactors are often in non-military facilities where security is relatively lax.

Since the dissolution of the Soviet Union, inadequately secured fissile material in Russia and the former Soviet Union has emerged as a serious concern. As heir to the Soviet nuclear arsenal, Russia has accorded a higher level of security to nuclear weapons than to its nonweaponized weapons-grade and weapons-usable uranium and plutonium—of which it has the world's largest stocks, located in at least 40 storage sites across the country.³⁹ Between 1993 and 2003, the International Atomic Energy Agency (IAEA) confirmed 17 incidents in which weapons-usable material was smuggled out of the former Soviet Union.⁴⁰ Moreover, with the breakup of the Soviet Union, about 35,000 scientists, engineers, and other technicians in the Russian nuclear complex alone were out of work. These former elites experienced severe reductions in their salaries and living standards: according to a 2002 report, many of the officials responsible for nuclear warhead storage and maintenance were being paid less than \$70 a month,⁴¹ and a 2003 survey of Russian nuclear weapons scientists found that 20 percent of respondents would consider working in North Korea, Syria, Iran, or Iraq.⁴² Programs such as the Nunn-Lugar Cooperative Threat Reduction, the Global Initiative to Combat Nuclear Terrorism, and the G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction have made significant strides both in securing loose material and in redirecting scientists into research for peaceful purposes. These programs are valuable instruments in choking off supply lines for terrorists and, assuming that denuclearization succeeds on the Korean peninsula and possibly elsewhere, these tools will become increasingly necessary to prevent non-state actors from acquiring weapons and to ensure that disarmament is irreversible.

³⁶ David Albright and Kevin O'Neill, "Key Nuclear Explosive Material," in *The Challenges of Fissile Material Control* (Washington, DC: Institute for Science and International Security Press, 1999), 85-96.

³⁷ Jonathan Medalia, "Nuclear Terrorism: A Brief Review of Threats and Responses," (Congressional Research Service, September 22, 2004), 1.

³⁸ Ibid.

³⁹ Although Russia has never disclosed the total number of sites where nuclear weapons and materials are stored, DOD and DOE have identified at least 91 warhead storage sites and 40 fissile material storage sites. See Joseph Cirincione, Jon Wolfsthal, and Miriam Rajkumar, *Deadly Arsenal: Nuclear, Chemical, and Biological Threats*, 2nd ed. (Washington, DC: Carnegie Endowment for International Peace, 2005).

⁴⁰ International Atomic Energy Agency, "Illicit Nuclear Trafficking: Facts and Figures," 2004, http://www.iaea.org/NewsCenter/Features/RadSources/Fact_Figures.html. See also William C. Potter and Elena Sokova, "Illicit Trafficking in the NIS: What's New? What's True?" *Nonproliferation Review* 9, no. 2 (Summer 2002) available at <http://cns.miis.edu/pubs/npr/vol09/92/92potsok.pdf>.

⁴¹ See Cirincione, Wolfsthal, and Rajkumar, *Deadly Arsenal*.

⁴² Ibid.

Radiological terrorism. The last two nuclear-related terrorism scenarios outlined by Ferguson and Potter are acts of radiological terrorism. Included in this category of mass destruction are a “dirty” or “fizzle yield” bomb made from nuclear waste that could yield up to a 1-kiloton explosion despite lacking sufficient fissile material for a sustained chain reaction;⁴³ an attack on a nuclear power plant, which could release devastating levels of radiation; and attacks using radioactive materials that are less fissile but more readily available, such as cesium-137, strontium-90, and cobalt-60.⁴⁴ These weapons, though more limited in their destructive capacity, are much more accessible to terrorist groups.

Several dirty bomb attacks by terrorist groups—not limited to al Qaeda—have been foiled since 9/11. Graham Allison writes,

To date, the only confirmed case of attempted nuclear terrorism occurred in Russia, on November 23, 1995, when Chechen separatists put a crude bomb containing several pounds of a mixture of cesium-137 and dynamite in Moscow’s Ismailovsky Park. The rebels decided not to detonate this dirty bomb, but alerted a national television station to its location.⁴⁵

Quite obviously, terrorist groups have seized on the theatrical potential of a radiological attack.

New Nuclear States and Challenges to the Nonproliferation Regime

The threat posed by new state proliferation does not principally lie in the deliberate use of nuclear weapons. Deterrence is still understood to mediate relations between nuclear powers, although the doctrine is evolving and some question whether “many-on-many” achieves the same balance of terror that stabilized the “one-on-one” Cold War dynamic—particularly with radical leaders at the helm who exhibit irrational characteristics that undercut the theoretical foundations of deterrence.⁴⁶ New nuclear states pose a spectrum of destabilizing threats; primitive command and control systems, which are more vulnerable to unauthorized or accidental launch and theft; miscalculated, deliberate use motivated by the asymmetric strategic balance with emerging arsenals’ lack of a secure second strike capability; preemptive action by adversaries; emboldening regional and global aggression; a relative decline in U.S. leadership and power projection; touching off regional proliferation; and the collapse of the nonproliferation regime, opening the floodgates to wildfire, destabilizing proliferation.⁴⁷

The risk of any given nonnuclear weapon state (NNWS) acquiring an independent deterrent is determined by the convergence of its intent and capability, and each nuclear aspirant is plotted at a wide variety of locations across the proliferation threat spectrum. Countries that pose strategically significant challenges may be high-capability and high-intent (Iran), high-capability and low-intent (Japan), or low-capability and high-intent (Syria). Beyond illustrating risk, these differing intersections determine the most likely pathway of proliferation and therefore how responsive each country is to a given proliferation prevention instrument. Thus any effective nonproliferation strategy must be tailored regionally and

⁴³ Bruce G. Blair, “What If Terrorists Go Nuclear?” Center for Defense Information, October 1, 2001, <http://www.cdi.org/terrorism/nuclear.cfm>.

⁴⁴ Center for Nonproliferation Studies, “WMD 411: Nuclear Terrorism.”

⁴⁵ Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Time Books, 2004), 31.

⁴⁶ See Keith Payne, *The Fallacies of Cold War Deterrence and a New Direction* (Lexington: University Press of Kentucky, 2001).

⁴⁷ Cirincione, Wolfsthal, and Rajkumar, *Deadly Arsenals*, 15–18.

country-by-country to take into account widely divergent capabilities, intents, security requirements, and incentive structures.⁴⁸

The nonproliferation security environment in the coming decade will be shaped primarily by the resolution of three current challenges: Iran, North Korea, and the weakening credibility of the nonproliferation regime. In the view of former Assistant Secretary of State for Nonproliferation Robert Einhorn, the countries most likely to pursue nuclear weapons in the event that one or more of those efforts fail are Brazil, Egypt, Iraq, Japan, Saudi Arabia, South Korea, Syria, Taiwan, and Turkey.⁴⁹

New Pathways to Becoming a Nuclear Power and the Efficacy of the Nonproliferation Regime

Because all countries that might seek nuclear weapons in the future are currently nonnuclear weapon parties to the Nuclear Non-Proliferation Treaty (NPT), new proliferators must either clandestinely develop a nuclear weapons capability or overtly pursue a “breakout” nuclear capability.⁵⁰ Under the second pathway, a country can obtain an NPT-compliant fuel cycle capability, allowing it to maintain the possibility of weaponizing but defer the decision on if and when to do so. Also known as a “latent” nuclear capability, this NPT loophole has emerged as a particularly troubling challenge to the nonproliferation regime. As noted above, the accumulation of significant quantities of weapons-grade HEU or plutonium is the most significant hurdle in developing an operational device. Producing these materials requires “front end” (uranium enrichment) or “back end” (separation of plutonium from spent fuel) fuel cycle capabilities. Although the civilian rationale for acquiring an indigenous enrichment or separation capability is weak, there are nonetheless many peaceful applications of the fuel cycle, and Article IV of the NPT guarantees state parties an “inalienable right” to develop—and receive assistance in—the civilian application of nuclear power.

The conflict over Iran’s enrichment program has severely strained the nonproliferation regime’s ability to balance Article IV with Articles I and II (which prohibit the spread of nuclear weapons to states that do not have them), and has escalated tensions between fuel cycle haves and have-nots. Potential proliferators have exploited this fault line in the hopes of keeping their own options open; and even friendly states, such as Egypt, have openly attacked U.S. initiatives to modify the NPT to curb fuel cycle proliferation.⁵¹ The credibility of the regime is further hampered by the perceived failure of nuclear weapon states (NWS) to abide by Article VI (which commits them to eventual disarmament), as well as the lack of universality (Israel, India, and Pakistan have nuclear arsenals, all of which are tacitly condoned and in some instances encouraged by U.S. policies). The coming years will put the nonproliferation regime to its hardest test, and the contours of the nonproliferation security environment in the 21st century will depend largely on whether the NPT can adapt to these new security challenges.

At issue as well is the conflict between the classic “arms controllers,” who prefer treaty-based universal nonproliferation instruments, and the “counter-proliferators,” who opt for ad hoc approaches to preventing and rolling back nuclear programs (such as the Proliferation Security Initiative, preemptive military action, etc.). Other factors, including the U.S.-India nuclear cooperation agreement, the U.S. failure to ratify the Comprehensive Test Ban Treaty, and the international community’s inability to prevent North Korea from withdrawing from the NPT and subsequently carrying out a nuclear test, have

⁴⁸ See Rebecca KC Hersman, “Identify and Influencing Future Proliferation Risks: East Asia, Latin America and the Middle East 2006–2011,” National Defense University (PowerPoint presentation for the Project on Nuclear Issues Nuclear Scholars Initiative, CSIS, Washington, D.C., March 7, 2008).

⁴⁹ Robert J. Einhorn, “Identifying Nuclear Aspirants,” *Nonproliferation Review* 13, no. 3 (June 2007): 498

⁵⁰ *Ibid.*, 496.

⁵¹ Claire Applegarth, “Divisions Foil NPT Review Conference” *Arms Control Today* (June, 2005) http://www.armscontrol.org/act/2005_06/NPTRevCon.asp.

added to a growing “proliferation pessimism.”⁵² This pessimism, stemming from the perceived ineffectiveness of various nonproliferation policies and initiatives, may cause a number of states to rethink their nonproliferation commitments. Though imperfect, a functioning and credible nonproliferation regime is a powerful inhibitor of new state nuclear weapon programs, particularly for states that place a high premium on their international standing (e.g., Brazil, which possesses an independent fuel cycle). A December 2004 United Nations report found that “we are approaching a point at which the erosion of the nonproliferation regime could become irreversible and result in a cascade of proliferation.”⁵³ For U.S. security interests, nuclear anarchy is unacceptable.

Clandestine Acquisition and Nuclear Smuggling Networks

In addition to the overt proliferation of sensitive fuel cycle technologies, a threat is posed by nonnuclear states pursuing clandestine programs. Libya, North Korea, Iraq, and Iran have all demonstrated and exploited the “undeclared facilities” loophole in the traditional IAEA safeguards regime. Because only safeguarded facilities and materials are subject to IAEA inspections under the original mandate, international access to suspected undeclared sites is allowed only after states ratify the “Additional Protocol”—which (for obvious reasons) hostile states seeking a nuclear weapons capability are reluctant to adopt voluntarily.⁵⁴ Whether a given nuclear aspirant is likely to develop an NPT-compliant or undeclared fuel cycle capability, or both, is another crucial consideration that decisionmakers must weigh in determining the appropriate policy response.

Clandestine programs rely on materials and technologies that are difficult to secure and conceal, and that international networks are increasingly capable of interdiction. Because the mere possession of one or two nuclear weapons does not serve most state-based security objectives, clandestine programs will almost certainly seek a covert fuel cycle facility. The fissile material must be either supplied from safeguarded fuel diverted from the aspirant’s civilian nuclear program or illegally imported or mined. For this reason, states with even a limited civilian nuclear program pose much greater capability-based proliferation threats. Export control regimes and sanctions that target dual-use items are among the traditional policy instruments for preventing access to material and technologies that can be used to develop clandestine programs. However, these policy tools have difficulty grappling with the military application of dual-use items. They are also ill-equipped to cope with the threat of nuclear technology black markets, since, by definition, illicit nuclear trafficking is not regulated by legal regimes. A. Q. Khan, the celebrated “father” of Pakistan’s nuclear program, and his nuclear smuggling affiliates constructed an elaborate nuclear technology black market that aided clandestine programs in Libya, Iran, and North Korea.⁵⁵ Although this network was exposed and uprooted, many former members escaped prosecution, and it or networks like it could regenerate. Tool and networks that track flows, monitor, and account for global supplies of fissile material are theoretically capable of overcoming both of these limitations.

⁵² Kurt M. Campbell, “Nuclear Proliferation Beyond Rogues,” *Washington Quarterly* 26, no. 1 (Winter 2002/2003): 10.

⁵³ Anand Panyarachun (chair), “A More Secure World: Our Shared Responsibility,” Report of the UN Secretary-General’s High-level Panel on Threats, Challenges and Change (December 2004), <http://www.un.org/secureworld>.

⁵⁴ “The 1997 IAEA Additional Protocol at a Glance,” Arms Control Association: Fact Sheets, January 2008, <http://www.armscontrol.org/factsheets/IAEAProtocol.asp>.

⁵⁵ See David Albright and Corey Hinderstein. “Unraveling the A. Q. Khan and Future Proliferation Networks,” *Washington Quarterly* 28, no. 2 (Spring 2005): 111-128.

Hedging

Despite fears of a “hyperproliferated” world,⁵⁶ a 2007 study prepared by the National Defense University found that no new states, apart from North Korea and Iran, are projected to be actively pursuing nuclear weapons by 2011.⁵⁷ Though this conclusion suggests that the sky is not falling, experts predict that the decision to acquire a nuclear weapons capability will increasingly become less straightforward. Twenty-first-century proliferators are less likely to make a decision to “go nuclear” and proceed down a linear path and are more likely to make a series of incremental decisions over time that gradually move them closer to a nuclear weapons capability, taking advantage of opportunities or vulnerabilities in the nonproliferation regime as they arise.⁵⁸ Policymakers must therefore be alert to the earliest possible developments that may signal interest in eventually pursuing a weapons program. Such indicators include the production of “nuclear myths” by policymakers or the influential elite, changes in the objective security circumstances facing the state (specifically, a deteriorating relationship with the United States or the emergence of an acute regional security threat), and shifts in the technical status of a country’s nuclear program (e.g., scientific training, procurement efforts, the role of the military in civilian programs).⁵⁹

In the past, to enjoy the security- and prestige-related benefits of acquiring a deterrent, states generally had to demonstrate their new nuclear capability by testing. By contrast, in the 21st-century proliferation environment, testing may not be required for deterrence; and as the crisis with Iran demonstrates, mastery of the fuel cycle is sufficient to project influence and accumulate negotiating power.

Demand-Side Pressures

The difficulty of coping with the proliferation of new nuclear states will depend not just on the effectiveness of supply-side inhibitors but also on the security calculation made by each nonnuclear weapon state as it takes into account the costs and benefits associated with a nuclear weapons capability. States are motivated to pursue nuclear weapons by considerations of external security (neutralizing conventional inferiority, protecting against regime change), prestige, claims to regional or global leadership, bargaining power, the demonstration of technological prowess, and domestic pressures.⁶⁰ Because security is the overwhelming driver, the nonproliferation environment in the coming decades will be largely determined by regional and global security trends and can be affected by U.S.-engineered security arrangements.

The United States and the international community can use a mixture of carrots and sticks to shape a regime’s cost-benefit security calculation, thereby either preventing it from gaining nuclear weapons capabilities or roll backing back capabilities that already exist. The main traditional sticks are threats of the use of force and sanctions, though coercive measures can often create perverse incentives that encourage the target state to accelerate or even begin a program. Sanctions must be applied judiciously—to preserve leverage and avoid insulating the regime from pressure—and with careful

⁵⁶ A possibility expressed in 2007 conversations between CSIS scholars and Principal Deputy Under Secretary of Defense for Policy Ryan Henry, among others.

⁵⁷ John Reichert, “Nuclear Proliferation: One a Decade, Or One a Year?,” National Defense University (PowerPoint presentation for the Conference on Strategic Weapons in the 21st Century, Washington, DC, January 25, 2007) <http://www.lanl.gov/conferences/sw/docs/reichert07.pdf>.

⁵⁸ See Ariel Levite, “Never Say Never Again: Nuclear Reversal Revisited,” *International Security* 27, no. 3 (Winter 2002/2003): 59-89.

⁵⁹ Peter R. Lavov, “Nuclear Proliferation Over the Next Decade: Causes, Warning Signs, and Policy Responses,” *Nonproliferation Review* 13, no. 3 (November 2006): 433-454.

⁶⁰ Scott D. Sagan, “Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb,” *International Security* 21, no. 3 (Winter 1996/1997): 54-86.

attention to the elements of the decisionmaking process or “pressure points” that these tools are capable of targeting.

The Middle East

Because of the Iranian regime’s professed refusal to accept any limitations on its ostensibly civilian uranium enrichment program, the prospects appear remote that a diplomatic breakthrough will be capable of imposing strategically significant constraints on Iran’s accumulation of weapons-grade HEU. Moreover, because the military option is not politically palatable (and there is an open question as to whether it would be effective), Senator John McCain’s notorious “choice” between attacking Iran and a nuclear Iran⁶¹ may, in effect, have already been made. The former UN weapons inspector David Albright has estimated that Iran could have enough weapons-grade HEU for a nuclear weapon as soon as 2009, although technical hurdles could stall that date to 2011.⁶² Viewing this situation as a binary “choice” is somewhat misleading, however. As a party to the NPT, Iran would face severe consequences if it chose to weaponize and withdraw from the treaty, and its near-term interests are most likely better served by remaining NPT-compliant. In the judgment of the Institute for Science and International Security, a “nuclear Iran” will most likely materialize in latent form.⁶³ Despite posing many of the same destabilizing consequences as actual acquisition, a latent capability also gives the international community a window to roll back the program or preempt weaponization. In any event, it is imperative that U.S. security doctrine prepare for the emergence of a declared or latent nuclear Iran by devising creative containment instruments to minimize the threat and reassure Iran’s neighbors.

The crisis with Iran may have already set in motion a nuclear arms race in the Middle East. The *Christian Science Monitor* reports that in 2007, Shi’ite Iran’s ambitions spurred 13 Sunni states (Egypt, Saudi Arabia, Jordan, Libya, Morocco, Algeria, Tunisia, Yemen, Oman, Qatar, the United Arab Emirates, Kuwait, and Bahrain) to declare their intention to seek nuclear power.⁶⁴ Many of these states have already signed contracts with foreign energy conglomerates to build reactors. Turkey has also expressed interest in developing a civilian nuclear infrastructure, and Israel’s September 6, 2007 bombing of an undisclosed Syrian facility raised speculations that Syria was constructing a reprocessing facility modeled on North Korea’s Yongbyon site. Because of the “inalienable right” to those capabilities guaranteed by Article IV, the United States not only lacks the legal authority to prevent these initiatives, it has in fact pledged to assist many of these programs, driven in part by the need to avoid accusations that its dealings with Iran are “unfair.” French energy conglomerates, such as Areva, are at the fore of this Middle East nuclear awakening aggressively signing nuclear energy technology deals with interested states. Although these states are decades away from developing a program with a military potential, these events testify both to the waning capability of the NPT and to the regional implications of new state proliferation.

East Asia

After a decade of disputes and failed negotiations over the status of its nuclear program, North Korea withdrew from the NPT in January 2003 and successfully tested a nuclear device in October 2006. The test sent shock waves through the international system and jolted policymakers into an awareness of the acute threats posed by nuclear proliferation. With a conventional military force of more than 1.1 million men, a formidable ballistic missile program, ties to terrorist organization and hostile states, and

⁶¹ CNN, “Senators: Military Last Option on Iran,” January 16, 2006, <http://edition.cnn.com/2006/US/01/15/iran.congress/index.html>.

⁶² David Albright, “When Could Iran Get the Bomb?” *Bulletin of the Atomic Scientists* (July/August 2006): 26–33.

⁶³ David Albright and Corey Hinderstein, “The Clock is Ticking, But How Fast?” Institute for Science and International Security (March 27, 2006) <http://www.isis-online.org/publications/iran/clockticking.pdf>.

⁶⁴ Dan Murphy, “Middle East Racing to Nuclear Power,” *Christian Science Monitor*, November 1, 2007, <http://www.csmonitor.com/2007/1101/p01s03-wome.html>.

adversaries protected by an array of U.S. security commitments, a nuclear North Korea poses substantial threats to U.S. vital interests.⁶⁵

On February 13, 2007, the members to the Six Party Talks arrived at an agreement under which North Korea will shut down its Yongbyon reactor in exchange for energy aid. In October, the terms of the agreement were expanded: North Korea will fully disable its plutonium production at Yongbyon and provide a “complete and accurate” accounting of its nuclear programs, and in exchange the United States will terminate the State Sponsor of Terrorism designation and South Korea will ship the remainder of pledged energy aid.⁶⁶ Despite this significant progress, a dispute over alleged omissions from the declaration of activities has stalemated the talks. The North Korean regime has a track record of drawing out negotiations to extract concessions; although a deal will likely be struck that mitigates its nuclear risk, it is reasonable to assume that throughout the coming years the regime will continue to be at a minimum a nuisance and at worst a high-level security threat.

The regional dynamics in East Asia appear more stable than in the Middle East. Despite having large and sophisticated civilian nuclear programs, Japan and South Korea are both under the stalwart protection of the U.S. nuclear umbrella; Japan, in particular, is so firmly committed to a nuclear-free posture that even a complete collapse of the February 13 agreement would be unlikely to prompt it to seriously consider acquiring an independent deterrent.⁶⁷ South Korea poses a more substantial, though still remote, risk of acquiring a clandestine or latent nuclear weapons capability. Unlike Japan, it does not possess an indigenous fuel cycle capability, but it has an extensive nuclear infrastructure and a vibrant scientific community. South Korea developed and later abandoned a nuclear weapons program in the 1970s, and the 2004 revelations of undeclared experiments to enrich micrograms of uranium, as well as separate small amounts of plutonium,⁶⁸ raised international suspicions that it may at least flirt with the idea of renewing the program if North Korea become a nuclear power or the U.S. security commitment becomes less credible.

The contrast between the situations in the East Asia and Middle East highlights the importance of targeted nonproliferation strategies. Low-capability, high-intent nuclear aspirants in the Middle East ought to be countered with supply-side inhibitors, but those tools are less effective for dealing with friendly East Asian states that have advanced nuclear infrastructures. The primary means of ensuring a nuclear-free Japan and South Korea (as well as Turkey, though its capabilities are much lower) is to bolster confidence in the U.S. extended deterrent. The State Department’s International Security Advisory Board published a report in 2007 that called bilateral and regional security assurances the “bulwark” of U.S. nonproliferation policy and presented a series of proposals for strengthening the credibility and perceived reliability of the U.S. nuclear umbrella.⁶⁹

⁶⁵ Victor D. Cha and David C. Kang, *Nuclear North Korea: A Debate on Engagement Strategies* (New York: Columbia University Press, 2003), 2.

⁶⁶ Alex Bollfrass, “Arms Control and Proliferation Profile: North Korea.” *Arms Control Today* (January, 2008) <http://www.armscontrol.org/factsheets/northkoreaprofile.asp>.

⁶⁷ Hajime Izumi and Katsuhisa Furukawa, “Not Going Nuclear: Japan’s Response to North Korea’s Nuclear Test” *Arms Control Today*, June 2007, http://www.armscontrol.org/act/2007_06/CoverStory.asp.

⁶⁸ See Jungmin Kang, Peter Hayes, Li BinTatsujiro Suzuki, and Richard Tanter, “South Korea’s Nuclear Surprise,” *Bulletin of Atomic Scientists* 61, no. 1 (January/February 2005): 40.

⁶⁹ Charles S. Robb (Chair), “Report on Discouraging a Cascade of Nuclear Weapons States,” International Security Advisory Board (The United States Department of State: October 25, 2007) <http://www.state.gov/documents/organization/95786.pdf>.

Future Weapons of Mass Destruction

I think it is no exaggeration to say we are on the cusp of the further perfection of extreme evil, an evil whose possibility spreads well beyond that which weapons of mass destruction bequeathed to the nation-states, on to a surprising and terrible empowerment of extreme individuals.

—Bill Joy, cofounder of Sun Microsystems, April 2000

The exponential pace of technological advancement has historically coincided with humanity's seemingly insatiable desire to develop increasingly destructive modes of annihilation. Though the possibility of "super weapons" may seem contrived, the future often alarms the past and there is "no reason to believe that the 21st century will be any less inventive."⁷⁰ What is fiction today may come to dominate the security landscape of tomorrow. Technological innovations in areas such as nanotechnology potentially have a host of peaceful and socially beneficial applications—including in detecting and combating CBW—but it would be wise for policymakers to temper the urge toward technological dominance with the recognition that humanity's well-meaning curiosity may precipitate its annihilation. The present concern has less to do with the *proliferation* of these technologies than with their *development*. The most effective proliferation prevention strategy therefore may be a domestic decision to prevent their emergence.

Nanotechnology may be able to create a fourth generation of nuclear weapons, based on inertial confinement fusion, that would use little to no fissile material (eliminating a major barrier to proliferation) and would have more versatile yields, "dramatically increas[ing] the fire-power of those who possess them."⁷¹ Molecular manufacturing, a nanotechnology application whose realization lies further in the future, also poses extreme dual-use risks both by enabling new classes of weapons and by multiplying the strength, power density and functional density of existing weapons.⁷² In comparison to CBRN weapons, Bill Joy writes,

The 21st-century technologies . . . are so powerful that they can spawn whole new classes of accidents and abuses. Most dangerously . . . these accidents and abuses are widely within the reach of individuals or small groups. . . . Thus we have the possibility not just of weapons of mass destruction but of knowledge-enabled mass destruction (KMD), this destructiveness hugely amplified by the power of self-replication.⁷³

Challenges to Mitigating CBRN Proliferation

The threats facing the 21st century from the spread of CBRN weapons can be distributed into three broad categories: the gradual emergence of new nuclear weapon states as the technologies and requisite nuclear materials spread to states that do not now have them (high probability, destabilizing but containable consequences); the use of chemical, biological, or radiological weapons by non-state actors (high probability, moderate to severe consequences); and the acquisition and subsequent detonation of a nuclear device by a non-state actor (low probability, catastrophic consequences). Though each warrants a separate set of responses, the common denominator in each scenario is the accumulation of sufficient quantities of

⁷⁰ The Stanley Foundation. "Future Weapons of Mass Destruction: A Joint Symposium" (June 2007), <http://www.stanleyfoundation.org/resources.cfm?id=244>.

⁷¹ Jane's Information Group, "Nanotechnology: The Potential for New WMD" (January 15, 2003), http://www.janes.com/security/international_security/news/jcbw/jcbw030115_1_n.shtml.

⁷² Mike Treder and Chris Phoenix, "Nanotechnology and Future WMD," Prepared for the Stanley foundation by the Center for Responsible Nanotechnology (December, 2006) <http://www.responsiblenanotechnology.org/Paper-FutureWMD.htm>.

⁷³ Bill Joy, "Why the Future Doesn't Need Us," *Wired Magazine*, April 2000, <http://www.wired.com/wired/archive/8.04/joy.html>.

weapons-grade materials. Therefore, initiatives to secure, account for, and curb the spread of weapons-usable fissile, chemical, and biological materials are perhaps the most potent tools available to mitigate the CBRN proliferation threat.

The absence of barriers to use places the non-state acquisition of CBRN capabilities among the most acute threats to U.S. vital interests. Because transnational networks are steadily growing and increasing in sophistication, this concern will be an enduring theme of the 21st-century security environment. At present, there is a split between those experts who suggest that recent events foreshadow further CBRN mass-casualty attacks and others, such as Bruce Hoffman, who see the narrowly targeted use of a chemical, biological, or radiological device as better able to serve terrorists' purposes, unleashing disproportionately large psychological devastation while not requiring a high degree of technological know-how.⁷⁴ In any case, as a 2002 National Defense University report wisely cautioned, policymakers attempting to predict terrorists' likely actions and tactics should not extrapolate from their own mode of reasoning:

Terrorist groups might simply not care that a particular dissemination method is not as effective . . . or that one strain of an agent is less virulent[;] . . . assuming that a terrorist organization will not attempt a specific type of attack or will not use a particularly difficult agent could be both erroneous and, from a public policy standpoint, dangerous.⁷⁵

The two most immediate and critical new state proliferation threats are the nuclear programs of Iran and North Korea. Existing hostilities toward the United States, autocratic regimes, and evidence that weapons might be used offensively suggest that both programs threaten U.S. national security more directly than do those of other recent proliferators. However, a growing pessimism surrounding the likelihood of successful diplomatic breakthroughs suggests that perhaps the intellectual energy devoted to espousing the "unacceptable" consequences would be better spent in designing initiatives to contain the threat and prevent the further erosion of nonproliferation norms should Iran or North Korea succeed in attaining a nuclear weapons capability.

The future of the nonproliferation regime hangs precariously on the outcome of the crises with Iran and North Korea. A number of other, related issues compound the NPT's "legitimacy crisis": a global surge in Article IV protected civilian nuclear power programs, the absence of a structural mechanism to prevent the ability of states to establish independent fuel cycles, the inherent lack of enforcement, and increasing accusations from nonnuclear weapon states that they are the victims of "nuclear apartheid" and "double standards." To revitalize the nonproliferation regime it is therefore necessary to meet two, somewhat contradictory objectives: convincing potential nuclear aspirants that the regime is in their national interest while simultaneously instituting measures to prevent the spread of technologies that bring a weapons capability within the reach of states. The specific challenge for U.S. non- and counterproliferation policy in the 21st century is to tailor a country-specific mix of policy and diplomatic instruments to constrain capability and minimize intent: first, by limiting access to sensitive materials and technologies; and second, by shaping the security and political landscape to raise the costs and reduce the perceived benefits of acquiring an independent deterrent.

⁷⁴ Hoffman, "CBRN Terrorism Post-9/11," 12–13.

⁷⁵ Center for Nonproliferation Research, "Chemical, Biological, Radiological, and Nuclear Terrorism: The Threat According to the Current Unclassified Literature," National Defense University, May 31, 2002, http://www.ndu.edu/centercounter/CBRN_Annotated_Bib.pdf.

PREVAIL IN THE STRUGGLE AGAINST RADICAL ISLAMISTS

A Multidimensional Campaign against the Globalizing Islamist Insurgency and Religious Terrorism

- The visual layout of the poster:
 - Bottom third: the modern “wave” of religious terrorism.
 - Depicts key trends, characteristics, and catalysts of this wave.
 - Trends: reliance on mass media, targeting critical infrastructure, development of social movement, regional franchises, and homegrown terrorists.
 - Characteristics: sustained campaign of suicide bombing, preference for mass murder.
 - Catalysts: Iranian Revolution and establishment of Shi‘ite theocracy, defeat of Soviets in Afghanistan, U.S. invasion of Iraq.
 - Depicts the sociological contributors that sustain this wave.
 - Map & System Dynamics Model
 - Map: Theaters of Active Insurgency
 - Red states are weak or failing, providing “safe haven” for terrorists.
 - Red spheres highlight theaters of active Islamist insurgency.
 - Within each theater, local terrorist organizations interface.
 - Matériel exchanges are made, especially through criminal networks—illicit arms trade, etc.
 - Links between theaters.
 - Core al Qaeda organization in Central Asian theater interacts with regional affiliates and allies: e.g., Jemaah Islamiyya and al Qaeda in the Islamic Maghreb (AQIM).
 - These organizations share matériel, make ideological and tactical exchanges.
 - Close relationships between leaders.
 - Despite these connections, the AQ network is likely to survive multiple amputations, and even decapitation.
 - System Dynamics Model: Al Qaeda’s Global Network
 - Inputs: required by terrorist organizations to function.
 - Outputs: results of terrorist activity, becomes a closed circuit, feeding the system.
 - AQ network has four levels, all connected by ideology and shared tactics:
 - AQ Core: the intractable terrorists.
 - Periphery: ally and affiliate organizations.
 - Homegrown: leaderless, unaffiliated activists.

- Sympathetic Community: potential recruits to network.
- Box: Graph Assessing the Terrorist Threat
 - The x-axis represents a terrorist organization's operational capabilities.
 - The y-axis represents an organization's level of hostility toward the U.S.
 - Hezbollah has same capabilities as AQ, yet has not attacked U.S. targets (recently).
 - Terrorist organizations that cooperate with AQ have increased capabilities *and* increased hostility toward the U.S.
 - Indoctrination is key part of AQ training.
- Box: Safe Haven in Pakistan
 - Safe haven offers the AQ core organizational and operational necessities:
 - Sanctuary for leadership.
 - Training grounds; also used by AQ for recruitment.
 - Access to weapons markets in Central Asia, Middle East, and Southeast Asia.
 - Potential access to nuclear facilities.
 - Sympathetic community of Muslims with shared ethnicity and personal experience.
 - Links to Europe through the visiting Pakistani diaspora communities.
 - Propaganda outlet from which AQ spreads its ideology.
 - *Destabilized regime.*
- We are in the era of 4th-generation warfare, in which states and non-state actors struggle to counter the asymmetrical strength of the U.S. by increasing reliance on terrorism.
 - Terrorism is a tactic of the weak but diabolical (asymmetrical), and attacks rejuvenate a movement or a cause.
 - State sponsorship of terrorism as a tool of foreign policy is likely to rise.
 - Increasingly difficult to hold actors accountable.
 - The U.S. has the most powerful military, but the military cannot fight on all the fronts of today's battles, which are often psychological.
 - Terrorists have developed highly effective tactics such as suicide bombing to target society's weaknesses.
 - Global technological advances have facilitated communication across the global terrorist network, and have also made today's terrorists more dangerous and capable of committing larger and more devastating attacks.
- Al Qaeda's network is likely to survive multiple amputations and even decapitation.
 - AQ's ideology acts as a surrogate for command and control.
 - Universal message couched in religion, directed at the disenfranchised and frustrated.
 - AQ exploits local causes, realigning them to fit its message; it co-opts local groups so that they pursue or propagate AQ's long-term agenda in addition to, or instead of, their own parochial aims.
- Three critical challenges in the struggle against global Islamist terrorists:
 - (1) The U.S. must win the war of ideas and delegitimize the enemy's message.

- Creating consensus on the definition of national values is effectively impossible in liberal democracies, where values are defined by an array of state and non-state actors and the domestic debate takes place on a global stage.
 - Restoring U.S. credibility/legitimacy in the world will take time.
 - “War on terror” rhetoric has aided terrorists, while making the U.S. appear bellicose.
 - Moderate Muslims risk legitimacy when seen as supported by the West.
 - In contrast, AQ’s strategy is to spread a simple, universal message that is mainly controlled by a limited number of individuals.
 - AQ leadership is aware that this is a battle of hearts and minds, and focuses resources accordingly.
 - AQ’s message is propagated every time a successful terrorist attack is perpetrated, whether AQ is responsible or not.
 - AQ is highly skilled at exploiting events, justifying violence, and framing events around its own narrative.
 - AQ propagates an attractively simplistic explanation for global imbalances and frames this in religious rhetoric, appealing to an individual’s highest purposes and discrediting dissenters.
 - (2) The U.S. must disband terrorist networks and disrupt attacks, but it cannot do this alone; it relies on the strength and resolve of allies.
 - Disbanding networks will involve building consensus in the international community about the nature of the threat, and building allies’ and partners’ capabilities.
 - Homegrown terrorists present an array of difficulties to counterterrorism:
 - Today, the AQ network’s radicalization is a bottom-up process with no geographic limits, occurring more frequently in Western democracies.
 - These organizations are often micro-cells, and they fly under the radar.
 - These terrorists are less predictable, since they are not restrained by following the core hierarchy’s strategy, and therefore they can be more dangerous.
 - Technological advances have made terrorists more dangerous in many ways; the Internet enables them to communicate with each other to spread ideology, grievances, and tactics.
 - Safe havens can be physical and virtual.
 - Terrorist organizations cannot be deterred in the same ways as rational actors, and therefore they must be denied the ability to successfully execute an attack.
 - For terrorists to be successful they have only to be right once, while the U.S. and allies must get it right every time.
 - Keeping terrorists from accessing nuclear weapons will be increasingly difficult as more states join the nuclear club.
 - Rogue states like Iran must be kept from selling or giving nuclear material to terrorist organizations.
 - Safeguarding Pakistan’s weapons stockpiles will become more difficult if the country continues to destabilize.
 - (3) Terrorists have been able to dictate the global agenda.

- Mass casualties are not the only threat posed by terrorist attacks: the reaction can be equally or more destabilizing (e.g., World War I was sparked to some degree by the anarchists' assassination of Austro-Hungarian Archduke Franz Ferdinand).
- The U.S. must control the response to terrorism by making the nation more resilient and strengthening the national resolve to protect its core values and way of life.
- Terrorism will continue to be a tool of the weak until its tactics are delegitimized.

PREVAIL IN THE STRUGGLE AGAINST RADICAL ISLAMISTS

A Multidimensional Campaign against the Globalizing Islamist Insurgency and Religious Terrorism

Cassandra E. P. Smith

In the post-9/11 environment, terrorism's power—to coerce and intimidate, to force changes in our normal behavior, and to influence our policies and affect how and on what we spend money—has increased enormously. In this respect, the stakes have not only grown, but public fears and expectations have as well. More and more, the metric of success in the war on terrorism is defined as the ability of intelligence agencies and law enforcement organizations to prevent, preempt and deter attacks. Conversely, the metric of success for the terrorist has become simply the ability to act. Although there is a world of difference between bombing a bar in Bali and attacking the Pentagon, the impact is not necessarily as dissimilar. Al Qaeda's power and receptiveness in parts of the world today is in fact based on the extraordinary success achieved and attention generated by the 9/11 attacks. Accordingly, the enormous rejuvenating and regenerative capacity of a new, successful attack can not be underestimated.

—Bruce Hoffman, *Al Qaeda, Trends and Future Potentialities* (2003)

Despite possessing the most powerful military in the world, the United States is involved in a number of protracted conflicts in which a resounding victory might never be possible. Under the two campaigns that currently define the war on terror, Operation Enduring Freedom and Operation Iraqi Freedom, U.S. troops fight vicious insurgencies in Afghanistan and Iraq. The enemy is contained in neither front, and its global links suggest that it continues to metastasize—regenerating in new forms and recruiting new membership around the world. Terrorism is nothing new—it is, after all, a tactic utilized by violent political movements throughout history—but today's terrorists differ from their predecessors because they are more violent, transnational in aims and outreach, better financed, and better trained, while their organizations are more difficult to penetrate and disrupt.¹

This current strain of terrorism is an amorphous threat that since September 11, 2001, has become “increasingly difficult to categorize or pigeonhole as an identifiable phenomena, amenable to categorization or clear distinction.”² Each threat merits individual evaluation and response. The material threat posed to the United States is determined by the convergence of a terrorist organization's capability

¹ Russell Howard, “Homeland Security and the New Terrorism,” in *Homeland Security and Terrorism: Readings and Interpretations*, ed. Russell Howard, James Forest, and Joanne C. Moore (New York: McGraw Hill, 2006), 13.

² Bruce Hoffman, *Al Qaeda, Trends and Future Potentialities: An Assessment* (Santa Monica, CA: RAND, 2003), 16 (www.rand.org/pubs/papers/2005/P8078.pdf).

and intentions. Since both variables are affected by time, a terrorist organization must adapt to changes in its operating environment, its external support, and public opinion.

Today al Qaeda is the terrorist group most dangerous to the United States. It has focused lethal and coordinated attacks on U.S. targets and maintains a high degree of potential organizational and operational capability despite U.S. successes in driving the group from its former safe haven in Afghanistan and overturning the Taliban regime that had supported it.³ But the threat of al Qaeda does not emanate from one organization hiding along the Durand line in the Hindu Kush; the term “al Qaeda” also refers to a network of affiliated organizations—a movement that radicalizes and inspires unconnected individuals to act out violently against the world order, under an ideology that claims to be a fundamentalist interpretation of Islam. Though the core al Qaeda organization has been weakened following 9/11 by U.S.-led operations, it has succeeded in its basic strategy of inspiring a broader, radical Islamist terrorist movement.⁴ This terrorism is made dangerous and more permanent by the global networks it has created and that it continues to support and expand. Groups such as Hezbollah in Lebanon and the Tamil Tigers in Sri Lanka possess capabilities equal to the al Qaeda core; however, their intentions toward the United States are at present more benign.⁵ Hezbollah spouts anti-U.S. vitriol, but the group has not attacked U.S. targets since the 1980s, when U.S. troops were engaged in a conflict to which Hezbollah was party.⁶ State sponsors of terrorism, such as Syria and Iran, use non-state terrorist organizations such as Hezbollah and Hamas as instruments of foreign policy. They seek to establish similar-minded theocracies throughout the Middle East.

Many believe that 9/11 changed the course of history; whether or not this is the case, U.S. foreign policy changed drastically in its aftermath. The U.S. response to 9/11 was arguably more significant than the events of that day, showing that the reaction to terrorism can be more transformative than the original acts of terror. Without properly understanding the enemy, the United States declared war on terrorism and conflated a variety of different threats into one “axis of evil,” feeding al Qaeda’s narrative of an “apocalyptic struggle between good and evil.”⁷

The counterinsurgency expert David Kilcullen, who has served as an adviser to the U.S. Department of State and Multinational Force–Iraq Commander, General David Petraeus, writes,

[W]e seem to be on a threshold of a new era of warfare. . . . [I]n this new era, nation-states are more powerful but less flexible than non-state opponents. As in all conflict, success will depend on our ability to adapt, evolve new responses, and get ahead of a rapidly changing threat

³ Kim Cragin and Sara Daly, *The Dynamic Terrorist Threat* (Santa Monica, CA: RAND, 2004), 81–82. At present, al Qaeda is the most dangerous terrorist group, since it has focused lethal and multiple coordinated attacks on U.S. targets, and has adapted effectively to the changing world over its 20 year history.

⁴ Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 2006), 285.

⁵ According to the calculations in Cragin and Daly, *The Dynamic Terrorist Threat*, 19.

⁶ Hezbollah does pose an extreme threat to Israel, a key U.S. ally, and should therefore be considered dangerous, and monitored closely.

⁷ G. John Ikenberry and Anne-Marie Slaughter, *Forging a World of Liberty under Law: U.S. National Security in the 21st Century*, Final Report of the Princeton Project on National Security (Princeton, NJ: Woodrow Wilson School of Public and International Affairs, Princeton University, 2006), 40.

environment. . . . In counterterrorism, methods that work are almost by definition already obsolete: our opponents evolve as soon as we master their current approach.⁸

Despite the challenge of this new era, the United States has made significant strides in countering the specter of an enemy that is both an “armed insurgency and a global criminal network.”⁹ Kilcullen further observes that the “war on terror is best understood as a campaign to counter a global Islamist insurgency.”¹⁰ To understand the “war waged against us as an insurgency, albeit one of unprecedented scope, yields a number of important insights about the conflict.”¹¹ The long-term strategy addresses the root causes of this movement, and the United States has modified its strategy even as the enemy adapts its own.

Religious Terrorism

According to the historian David Rapoport, there have been four distinct modern “waves” of terrorism, each marked by its own political motif and distinctive organization or use of violence.¹² In addition to having a dominant religious theme, today’s “fourth wave” of terrorism is characterized by suicide bombings and mass murder.¹³ The advantages of espousing religious ideology are best explained by Muslim world affairs expert Graham Fuller:

Peoples who resist foreign oppressors seek banners to propagate and glorify the cause of their struggle. The international class struggle for justice provides a good rallying point. Nationalism is even better. But religion provides the best one of all; appealing to the highest powers in prosecuting its cause. And religion everywhere can still serve to bolster ethnicity and nationalism even as it transcends it—especially when the enemy is of a different religion. In such cases, religion ceases to be primarily the source of clash and confrontation, but rather its vehicle. The banner of the moment may go away, but the grievances remain.¹⁴

Terrorism has been conducted in the name of all religions, but today the majority of religious terrorist organizations are “Islamic.” Two events in the Middle East catapulted Islamist terrorism and radical Islam to the fore: the Iranian Revolution, followed by the establishment of a Shi‘ite theocracy in 1979, and the defeat of the Soviets in Afghanistan in 1989. Postrevolution Iran sought to expand its theocratic model to other parts of the Muslim world. In the midst of a massive war with Iraq, Iran donated

⁸ David Kilcullen, “New Paradigms for 21st Century Conflict,” *eJournal U.S.A.* (U.S. State Department July 2007), <http://usinfo.state.gov/journals/itps/0507/ijpe/kilcullen.htm>.

⁹ Slaughter and Ikenberry, *Forging a World of Liberty under Law*, 40.

¹⁰ David Kilcullen, *Countering Global Insurgency: A Strategy for the War on Terrorism* (Canberra & Washington: 2004), <http://virtuallibrary.state.gov/KilcullenCounteringGlobalInsurgency.pdf>.

¹¹ See Joseph MacMillan and Christopher Cavoli, “Countering Global Terrorism,” in *Strategic Challenges: America’s Global Security Agenda*, ed. Stephen Flanagan and James Schear (Washington, DC: NDU Press, 2008), 5.

¹² Rapoport marks the advent of the fourth wave with two significant events in the Muslim world: the Iranian Revolution and establishment of a Shiite theocracy, and the Soviet invasion of Afghanistan. Rapoport considers the first wave of religious terrorism to be the anarchists, the second the anti-colonialists, the third the new-left. See David Rapoport, “Four Waves of Modern Terror” *Current History* (December 2001): 419–25.

¹³ According to Bruce Hoffman, “The reasons that terrorist incidents perpetrated for religious motives result in so many more deaths may be found in the radically difference value systems, mechanisms of legitimation and justification, concepts of morality, and worldviews embraced by the religious terrorist and his secular counterpart” (*Inside Terrorism*, 88).

¹⁴ Graham Fuller, “A World without Islam,” *Foreign Policy*, no. 164 (January/February 2008): 52–53.

\$60–80 million to Hezbollah’s successful campaign against Israeli and American troops in Lebanon in the 1980s.¹⁵ There Hezbollah popularized the use of hijacking, kidnapping, and suicide bombing. The humiliating defeat of the Soviet Union in Afghanistan, though largely funded by the United States via the CIA and Pakistani government interlocutors, was claimed by the *mujahedeen* (holy warriors) who came from throughout the Middle East to train and fight. In reality, the military impact of these Arab fighters was minimal and in some cases counterproductive—the real fighting was done by Afghans. However, the impact of this event cannot be understated in its importance to the evolution of Arab terrorist organizations, including the contacts made between Egyptian and Saudi Arabian radicals. In the 10 years spent fighting the Soviet troops, the mujahedeen “acquired ideological unity, international connections, and experience in warfare,”¹⁶ as well as a sense of invincibility gained from vanquishing a superpower. It was here that al Qaeda’s international network was founded. These mujahedeen returned to their home countries, and further radicalized and inspired homegrown organizations.

Bruce Hoffman asserts that religious terrorists perceive themselves as “outsiders” to an imperfect order, and are thus capable of committing more heinous crimes than secular terrorists.¹⁷ A commitment to destruction makes the global Islamist terrorist movement an extraordinary threat. This commitment has been expressed through the employment of suicide terror, whereby the perpetrator of suicide terror is venerated, and the deed itself is the reward.¹⁸

Islam

Religion is the vehicle and not the driving force behind this wave of terrorism. Fast-growing globalization and political openness in many parts of the world following the end of the Cold War created waves of instability that coincided with an explosion in political Islam. The demonstration of overwhelming U.S. military force in the first Gulf War—with many of its troops based in the sacred home of Islam, Saudi Arabia—created paranoia among many states and fringe movements.

In the midst of this changing environment, al Qaeda promised “conversion and personal salvation.”¹⁹ Once marginalized extremist clerics were given a pulpit from which they could preach the ideological underpinning of the movement, a violent interpretation of *jihad* (holy war),²⁰ rooted in a

¹⁵ Louise Richardson, *What Terrorists Want: Understanding the Enemy, Containing the Threat* (New York: Random House, 2006), 64.

¹⁶ *Ibid.*, 66.

¹⁷ Hoffman, *Inside Terrorism*, 89.

¹⁸ Al Qaeda has preferred the use of suicide bombers as opposed to remote detonation because of the support they create among Muslims. Al Qaeda releases videos of the martyrs, making it both a tactical and a strategic choice since the target audience is Muslim (MacMillan and Cavoli, “Countering Global Terrorism,” 4).

¹⁹ Brian Jenkins, introduction to *Terrorism: What’s Coming, the Mutating Threat*, ed. James O. Ellis III (Oklahoma City, OK: Memorial Institute for the Prevention of Terrorism, 2007), 7. The recent history of the Muslim world consists mostly of variations on post-colonial clashes and national identity deficits. David Esposito points out that “Globalization of communications, technology, and travel has heightened a new consciousness of the transnational identity and interconnectedness of the Islamic community (*ummah*) that follows events across the Muslim world on a daily, even hourly basis. They reinforce a sense of solidarity and identification. Regardless of national and cultural identities, most Muslims are not secular; they do self-consciously identify themselves as Muslims. They celebrate or bemoan successes and failures of Muslim struggles for self-determination, freedom from oppression, and economic development across the world, as well as of militant jihads, holy and unholy wars” (Esposito, *Unholy War* [New York: Oxford University Press, 2002], 158).

²⁰ Literally translated, jihad means “struggle.” In Islam, there is a large (*jihad-i akbar*) and a small (*jihad-i asghar*) jihad, the former is a personal battle to overcome disbelief, and the latter is a holy war waged against invading non-

radical—but not inherently violent—modern sect of Islam called *Salafism*.²¹ Modern Salafism originated from the ultra-conservative Wahhabi brand of Islamic fundamentalism institutionalized in Saudi Arabia.²² When Arab nationalism declined in the 1980s, Islamic fundamentalism filled the ideological void. Radical Egyptians such as Sayid Qutb, hardened in an environment of dictatorial rule and torture, laid the doctrinal groundwork for the Muslim Brotherhood's and subsequent radical interpretations of jihad. These influential thinkers can be credited with much of the violent, antimodernist rhetoric of today's Islamist terrorists.²³

Bernard Lewis writes that all forms of Islamic extremism, “are, in a sense, Islamic in origin, but some of them have deviated very far from their origins. . . . In considering the sayings of the Prophet, for example, they discard the time-honored methods developed by the jurists and theologians.”²⁴ As is often the case, interests shape ideals, and religious texts and beliefs have been adapted to justify deeds. During the Algerian civil war, the Groupe Armée Islamique leader Ammari Saifi justified slaughtering women and children—decried by the Qur'an as the killing of noncombatants—by accusing them of apostasy (*takfir* in Arabic), a sin graver than rape or murder in Islam.²⁵ An ideological battle is raging over Islam's role in the modern world, and whether the two are compatible. The United States is dependent on Muslim allies—and impartial mediators—to reclaim Islam from those who exploit it as a means of political subversion. Al Qaeda has benefited from using the Manichaeic rhetoric of religious absolutes, since dissenters are branded tools of the West on an anti-Islamic quest. Only through political dialogue can the United States reveal the ulterior political aims of al Qaeda's network, and exploit divisions within the enemy.

Global Terrorists

Over the years, al Qaeda evolved from a single organization into a “network of networks” and, beyond that, a movement independent of the core hierarchy. Al Qaeda's network is best illustrated using a series of concentric circles (see Figure 1). The core is the organization in Pakistan; the next ring, the “periphery”

Muslim armies. There is no single definition or understanding of jihad and the obligations of a Muslim under the doctrine. Qur'anic scripture is as ambiguous as any other religious text, offering commandments that can be exploited by any group. It is important to note that jihad has a positive connotation to Muslims, since it is an obligation of faith, and that the highly publicized Western conception of jihad as a compulsion to commit violence against non-Muslims is only adhered to by a small portion of radical Islamists. See Esposito, *Unholy War*, 64–70.

²¹ For more information on modern Salafism, see Trevor Stanley, “Understanding the Origins of Wahhabism and Salafism,” *Terrorism Monitor* 14, no. 14 (2005);

<http://www.jamestown.org/terrorism/news/article.php?articleid=2369746>. Also see Daniel Byman, *The Five Front War* (Hoboken, NJ: Wiley, 2008), 14–17. For more on al Qaeda's violent interpretation of Salafism, see Daniel Benjamin and Steven Simon, *The Next Attack* (New York: Times Books, 2005), 55–58, 66–75.

²² For more information on Wahhabism, see Bernard Lewis, *The Crisis of Islam* (New York: Modern Library, 2003), 120–36. To counter Nasser's and pan-Arabism's rising power in Middle East politics, the Saudi establishment propagated this global form of Wahhabism, sometimes under the direction of members of the exiled Muslim Brotherhood, in a number of outreach programs like the Muslim World League, the Islamic International Relief Organization, and so on. See Esposito, *Unholy War*, 105–17.

²³ For more information on Sayid Qutb, his inspiration and contributions to radical Islam, see Mark Juergensmeyer, *Terror in the Mind of God* (Berkeley: University of California Press, 2003), 82–84; Daniel Benjamin and Steven Simon, *The Age of Sacred Terror* (New York: Random House, 2003), 62–94; Lewis, *The Crisis of Islam*, 76–81; Esposito, *Unholy War*, 56–61.

²⁴ Lewis, *The Crisis of Islam*, 138. According to Lewis, “The best known are the subversive radicalism of al-Qaeda and other groups that resemble it all over the Muslim world; the preemptive fundamentalism of the Saudi establishment; and the institutionalized revolution of the Iranian hierarchy[.]”

²⁵ For more on the use of apostasy as a basis for jihad, see Benjamin, *Age of Sacred Terror*, 195–98.

of allies and regional franchises; the third circle, unaffiliated activists; and the fourth circle, the broader, sympathetic community.²⁶ The State Department’s 2004 annual report on terrorism finds, “It is therefore no longer only al Qaeda itself but increasingly groups affiliated with al Qaeda or independent ones adhering to al Qaeda’s ideology that present the greatest threat of terrorist attacks against U.S. and allied interests globally.”²⁷ A multidimensional strategy is necessary to combat such a complex challenge.

Figure 1



The 2006 U.S. National Strategy for Combating Terrorism outlines three key missions: (1) protect the homeland and extend U.S. defenses, (2) disrupt terrorist operations, and (3) deprive U.S. enemies of what they need to operate and survive.²⁸ The document sets out the long-term agenda of advancing effective democracy and winning the war of ideas. Four priorities for action over the short term are to prevent attacks by terrorist networks; deny chemical, biological, radiological, and nuclear (CBRN) weapons to rogue states and terrorist allies who seek to use them; deny terrorists virtual or physical safe haven; and deny terrorists control of any nation they would use as a base and launching pad for terror. The front lines of this battle are expanding. Afghanistan and Iraq pose continuous challenges for the United States; Algeria appears to be on the brink of civil war; and the situation in Pakistan is volatile.

²⁶ Byman, *The Five Front War*, 19–38. Martha Crenshaw explains that the groups of the global terrorist network are not structurally unified, and that they possess great organizational diversity. “Some groups, for example, do resemble social networks with highly developed interconnections and nodal points. Some are more closely associated with central al Qaeda organizations than others. Some are tiny autonomous cells. In each case, however, the important point is that the groups are essentially local though inspired or emboldened by a global cause. They do not need particular skills or resources in order to cause massive loss of life. They do not need large numbers, deep pockets, public approval, or logistic support from al Qaeda. They do not need a charismatic imam or clerical authority to legitimize their activities. Such conspiratorial undergrounds appear in Western liberal democracies as well as authoritarian regimes in the Middle East and Asia” (Crenshaw, “The Organization of Terrorism,” in Ellis, ed., *Terrorism: What’s Coming, the Mutating Threat*, 22).

²⁷ U.S. Department of State, “Country Reports on Terrorism, 2004” (April 2005), 7.

²⁸ Terrorists rely on interrelated and mutually reinforcing organizational and operational tools. These “organizing tools” also shed light on how al Qaeda has developed its global network of sympathizers. An organization needs a salient belief system, strong leadership, a continuous recruitment pool, and publicity to survive.

Al Qaeda Core

Since the 2001 loss of sanctuary in Afghanistan, al Qaeda's core leadership has successfully regrouped along the Pakistan-Afghanistan border, in the Federally Administered Tribal Areas (FATA), having found support there among local Pashtun tribes. The significance of sanctuary for the al Qaeda core and Taliban allies cannot be overstated. Taliban commander Mullah Momin Ahmed told *Newsweek*, "Pakistan is like your shoulder that supports your RPG. . . . Without it you couldn't fight. Thank God Pakistan is not against us."²⁹ Safe haven in Pakistan has provided al Qaeda with a propaganda base, reliable access to weapons and funding, and operational space and security. Al Qaeda relies on training camps and training activities as a recruitment and networking tool, thereby strengthening its global network. Many suspect that it has links to Pakistan's Intelligence Service (ISI) and the army.³⁰

Al Qaeda has successfully diversified its sources of funding despite international crackdowns on terrorist funding in the wake of 9/11. The opium poppy trade in Afghanistan and links to other transnational organized criminals have been exceptionally lucrative, and the channeling of funds from Islamic charities has also kept the organization afloat.³¹

Peter Bergen suggests that Pakistan is al Qaeda's link to Europe, especially the United Kingdom, since a large number of Britain's Pakistani diaspora visit the country each year (an estimated 400,000 traveled to Pakistan in 2004). This link between Pakistan and Britain gives radical elements the opportunity to travel to terrorist training camps and liaise with an array of terrorist organizations. According to a Spanish counterterrorism official, "the jihadi threat from Pakistan is the biggest emerging threat we are facing in Europe. Pakistan is an ideological and training hotbed for jihadists, and they are being exported here."³² Also, all of the significant Islamist terrorist attacks in Europe have had some ties to Pakistan.³³ In addition to cooperation with European radicals, al Qaeda has developed close ties with Kashmiri terrorists, who were responsible for the October 18, 2007, attacks on former Prime Minister Benazir Bhutto's caravan and for her assassination in December 2007.³⁴

Pakistan's location gives al Qaeda reliable access to weapons markets in Iraq, Central Asia, East Asia, and Kashmir. Most terrorist groups depend on improvised explosive devices, since they are the weapons most easily acquired or manufactured. However, al Qaeda employs a variety of weaponry—their capabilities are dependent on possessing a safe haven and adequate operational space to conduct long-term planning. Shortly before her assassination, Benazir Bhutto warned of the threat of jihadists obtaining nuclear weapons if Pakistan fails to neutralize the Taliban and stabilize internal turmoil.³⁵ The possession

²⁹ Ron Moreau and Michael Hirsch, "Pakistan: Where the Jihad Lives Now," *Newsweek*, October 29, 2007, 26–34.

³⁰ See Bruce Reidel, "al-Qaeda Strikes Back," *Foreign Affairs* 86, no. 5 (May–June 2007): 24–70. Also see C. Christine Fair and Peter Chalk, *Fortifying Pakistan: The Role of U.S. Security Assistance* (Washington, DC: U.S. Institute of Peace Press, 2006), 84 n. 7.

³¹ Some Islamic charities have been used clandestinely to channel funds to terrorist organizations, probably without official knowledge. See J. Millard Burr and Robert O. Collins, *Alms for Jihad: Charity and Terrorism in the Islamic World* (Cambridge: Cambridge University Press, 2006).

³² See Elaine Sciolino, "Terror Threat From Pakistan Said to Expand," *New York Times*, February 10, 2008.

³³ Mohammed Sidique Khan, the mastermind of the July 7, 2005 London bombings traveled to Pakistan well before the attacks.

³⁴ Lashkar-e-Toiba and Jaish-e-Muhammad are the Kashmiri terrorists mentioned here. For more information on these groups, see www.tkb.org.

³⁵ Kanchan Lakshman, "Bhutto warns of al-Qaeda Threat to Pakistan's Nuclear Arsenal," *Terrorism Focus* 4, no. 41 (2007), <http://www.jamestown.org/terrorism/news/article.php?articleid=2373847>.

of nuclear weapons by a non-state actor poses a unique and extreme danger to the world order. In addition to the capability to cause massive casualties, possession of CBRN weapons confers status on a terrorist group. Ultimately, perception is the primary determinant of terrorist activity; thus attacks are displays of relevance and strength, executed as part of an information campaign, or “propaganda by deed.”³⁶

Al Qaeda Periphery

The “periphery,” regional franchises and allies, is composed of individuals who have ties to core members but pursue more nationalist goals. Indonesian Jemmah Islamiyya is considered an ally of al Qaeda, while the Algerian Groupe Salafiste pour le Prédication et le Combat has rebranded itself as a regional franchise, al Qaeda in the Islamic Maghreb (AQIM).³⁷ Al Qaeda serves as a force multiplier for other militant groups. In addition to improving their operational capability, groups who have connected to al Qaeda have become more hostile to Americans as they become indoctrinated into al Qaeda’s ideology.³⁸ In return, these organizations have assisted the core “with acquiring documents, hiding operatives, or otherwise preparing for an attack.”³⁹ Today AQIM seems focused on the situation in Algeria, and is not likely to divert resources to attack U.S. targets—but an organization’s intentions are not a fixed variable, and neither is the level of control that al Qaeda exercises over these groups. David Kilcullen argues that the movement is really a linked insurgency, with active uprisings waged across diverse theaters.⁴⁰ Affiliated Chechen and Kashmiri terrorists provide an excellent example of al Qaeda’s ability to link disparate elements into “a broad network capable of working together for common goals, even though these groups are barely unified.”⁴¹ While serving as Director of National Intelligence, John Negroponte testified that this network is growing, as the representation of diverse terrorist groups in Iraq demonstrates.⁴² At least 18,000 fighters, trained in Afghanistan from 1996 to 2001, are now positioned in

³⁶ This theory was penned by Carlo Pisacane, an Italian Republican extremist, but popularized by the French anarchist Paul Brousse.

³⁷ When Jemaah Islamiyya (JI) was founded in 1993, most of its senior leadership had trained in Afghanistan. Some believe that JI is under the control of al Qaeda central, while others believe that JI cooperates with al Qaeda only when it is mutually beneficial. See Richard A. Clarke, ed., *Defeating the Jihadists: A Blueprint for Action* (New York: Century Foundation Press, 2004), 24–27. <http://www.homelandsec.org/publications.asp?pubid=498>. Also see MIPT’s Web site, <http://tkb.org/Group.jsp?groupID=3613>. The GSPC became AQIM in 2007, after Ayman al-Zawahiri formally approved of the merge. See MIPT’s page: <http://tkb.org/Group.jsp?groupID=3777>

³⁸ According to Bruce Hoffman, “Particular emphasis will continue to be laid on the exploitation of local causes with which al-Qaeda’s ongoing propaganda efforts will be realigned to fit its pan-Islamist ideology. In many instances, these local cells will also continue to be surreptitiously co-opted by al-Qaeda so that, unbeknownst to their rank and file, the group will in fact pursue al-Qaeda’s broader, long-range goals in addition to or instead of its own, more parochial goals. This process has been evident in some of the Jemmah Islamiya attacks in Indonesia and Singapore as well as among some Algerian terrorist cells operating in European countries” (Hoffman, *Al Qaeda, Trends and Future Potentialities*, 13–14).

³⁹ Byman, *The Five Front War*, 26.

⁴⁰ David Kilcullen outlines the nine theaters of “jihadi operation” to show the global reach of the movement in *Countering Global Insurgency, A Strategy for the War on Terrorism*. (Rohan Gunaratna writes that AQ will increasingly rely on its operatives outside the Middle East and Central Asia to let its presence and strength be known (Gunaratna, “Defeating Al-Qaeda—The Pioneering Vanguard of the Islamic Movements,” in *Defeating Terrorism*, ed. Russell Howard and Reid Sawyer (New York: McGraw Hill, 2004), 1–29.

⁴¹ Byman, *The Five Front War*, 31.

⁴² John Negroponte, “Annual Threat Assessment of the Director of National Intelligence,” testimony before the Senate Select committee on Intelligence, February 2, 2006.

some 60 countries throughout the world.⁴³ This terrorist network may not be reliant on the control or oversight of any individual, and “is structured to survive multiple amputations, even decapitation.”⁴⁴

Homegrown Terrorists

Perhaps the most frightening trend is the rise in recent terrorist attacks perpetrated by self-starter, homegrown terrorist groups, “unaffiliated activists”⁴⁵ conducting attacks in the name of the global Islamist terrorist movement but without any real links to the group’s main command structure.⁴⁶ To the leaderless terrorists of this third circle, al Qaeda’s universal ideology is a “surrogate for command and control.”⁴⁷ Before the attacks of 9/11, al Qaeda’s transnational network was maintained through face-to-face contact, which necessitated international travel. Today such travel is increasingly difficult, so the global terrorist network increasingly relies on cyberspace to connect. While these connections have contributed to the rise in ideological and tactical information sharing, weapons and personnel cannot be moved as easily. Because these terrorists have not been incorporated into the al Qaeda network, they are less predictable and less detectable. These groups are becoming more sophisticated, taking advantage of the availability of tactical and technical information on the Internet to improve their capacity to collect intelligence, use technology, and conduct operations.⁴⁸

System Dynamics of al Qaeda’s Global Network

Iraq is and will likely continue to be Islamist terrorists’ rallying cry and cause célèbre, even as the front line shifts to Pakistan and Afghanistan. The recently released Sinjar documents⁴⁹ reveal that around nine in ten suicide attacks in Iraq are carried out by foreigners, most of whom come from areas of high

⁴³ Bruce Hoffman refers to the 2004 *Strategic Survey* published by the International Institute for Strategic Studies. See Hoffman, *Inside Terrorism*, 284.

⁴⁴ Benjamin and Simon, *Age of Sacred Terror*, 170. Paul Pillar of the CIA testified that the al Qaeda network will survive beyond the demise of Usama bin Laden.

⁴⁵ Byman, *The Five Front War*, 32.

⁴⁶ Al Qaeda “still retains some form of a centralized command and control structure responsible for gathering intelligence, planning, and perhaps even overseeing spectacular attacks against what are deemed the movement’s most important, high-value targets in the United States, the United Kingdom, Pakistan, and doubtless elsewhere. The computer records, email traffic, and other documents seized by Pakistani authorities when a computer savvy al Qaeda operative named Mohammed Naeem Noor Khan was apprehended in July 2004 point to the continued existence of a more robust, centralized entity than had previously been assumed” (Hoffman, *Inside Terrorism*, 284).

⁴⁷ MacMillan and Cavoli, “Countering Global Terrorism,” 3.

⁴⁸ The perpetrators of the London bombings are a perfect example of an unaffiliated micro-cell whose radicalization process was rapid. The attack was completely funded by the leader of the cell, Mohammed Sidique Khan, and cost only \$15,000 (according to *State of Struggle*, ed. Justine A. Rosenthal [Washington, DC: Council on Global Terrorism, 2006], 19). In 2003, Bruce Hoffman wrote that “we are also likely to see increased recruitment [by al Qaeda] targeting second- and third-generation European Muslims living in diaspora communities there. Particular recruitment efforts have already been focused, for example, on Muslim youth living in the Netherlands who it was previously assumed had been completely assimilated into their new host countries and cultures. Al Qaeda operatives will thus seek to embed themselves in, and draw new sources of support from, receptive established Muslim communities. In this way, new recruits can be drawn into the movement who may not have previously come under the scrutiny of local or national law enforcement” (*Al Qaeda, Trends and Future Potentialities*, 14). The Dutch Intelligence Service, AIVD, recently released a report on the rise of radical fundamentalism in the Netherlands, finding that this trend was home grown and not imported from or influenced by events or individuals in the Middle East and North Africa. See *The Radical Dawa in Transition: The Rise of Islamic Neoradicalism in the Netherlands* (The Hague: General Intelligence and Security Service (AIVD), 2007), <https://www.aivd.nl/contents/pages/90126/theradicaldawaintransition.pdf>.

⁴⁹ Karen DeYoung, “Papers Paint New Portrait of Iraq’s Foreign Fighters,” *Washington Post*, January 21, 2008.

insurgent activity (Saudi Arabia, Morocco, Syria, Libya, and Algeria, most prominently).⁵⁰ Drawing fighters to Iraq has not only prolonged the conflict but also enabled it to serve as a training ground for new recruits. Those that survive become skilled in sniper tactics, urban warfare, the use of man-portable surface-to-air missiles, and counterintelligence practices.⁵¹ These fighters are also important instruments of propaganda, spreading the message of jihad in the same way as did the mujahedeen returning from fighting the Soviets. The Taliban and al Qaeda have reemerged in Afghanistan, making it a training ground once again, despite U.S. and allies' efforts.

Increasingly, terrorism is inspiring individuals to act independently and engage in violence in the name of a large, vague political movement to which they might not have any direct connection, "but nonetheless draw spiritual and emotional sustenance and support from."⁵² The devastation caused to the United States on 9/11 catapulted al Qaeda's ideology to the fore as a successful path of resistance against the dominant world hegemon. In the years following 9/11, individuals buffeted by the forces of rapid globalization joined the global Islamist terrorist network, having found a banner beneath which to rally.⁵³ According to Jessica Stern, whose analysis draws on numerous interviews with terrorists:

Holy wars take off when there is a large supply of young men who feel humiliated and deprived; when leaders emerge who know how to capitalize on those feelings; and when a segment of society is willing to fund them. They persist when organizations and individuals profit from them psychologically or financially. But they are dependent first and foremost on a deep pool of humiliation.⁵⁴

Root Causes

Regime type may play a role in the proliferation of terrorists. However, promoting democracy and countering terrorism are two vital but distinct missions.⁵⁵ There is much contention among experts about

⁵⁰ Although foreign fighters are relatively few in number in Iraq and carry out only a handful of total attacks in the country, theirs have been the most destabilizing and spectacular. For instance, the attack carried out on the UN compound in 2003 and the attack against the Al Askariya mosque in 2006 were performed by foreign suicide bombers.

⁵¹ Byman, *The Five Front War*, 240–41.

⁵² Bruce Hoffman goes on to point out that "Indeed, in the past ten years or so—with the exception of the two world Trade Center attacks and that on the Pentagon—all of the most significant terrorist incidents that occurred in the United States were perpetrated either by a lone individual or very tight two- or three-man conspiratorial cells (*Al Qaeda, Trends and Future Potentialities*, 17).

⁵³ Al Qaeda preaches a very strict and violent strand of Salafi Islam that espouses a transformational, not temporal goal. The stated goal is to restore the pure Muslim community (*Ummah*) of the early Caliphate through a violent rejection of the modern world order. The first stage of achieving this is to cast out the "far enemy" (the United States) from Muslim lands by exhausting the United States in "bleeding wars." The second stage is to topple Arab regimes, destroy Israel, and restore Shari'a law, creating a pan-Islamic state. The third and final stage is to settle the score with Shi'a Muslims (this stage must come last, since Shi'a support will be essential to complete stages 1 and 2). For more on al Qaeda's goals, see Michael Scheuer, "Al-Zawahiri's September 11 Video Hits Main Themes of al Qaeda Doctrine," *Terrorism Focus* 3, no. 36 (2006),

<http://jamestown.org/terrorism/news/article.php?articleid=2370135>. However, Brian Jenkins claims that self-proclaimed "jihadists" are different from other terrorists because they "do not seek autonomy, independence, revolution, control of the reigns of the government, or political reform" (Jenkins, introduction, 7).

⁵⁴ Jessica Stern, "Beneath Bombast and Bombs, a Caldron of Humiliation," *Los Angeles Times*, June 6, 2004.

⁵⁵ The 2006 National Strategy for Combating Terrorism states that democracy is the "antithesis of terror." The State Department's 2000–2003 statistics in the "Patterns of Global Terrorism" report show that more terrorist activity took

the value of assessing the “root causes” of terrorism, and whether they exist at all. In looking at the broadest corollaries between the socioeconomic conditions in areas of conflict, one does see poor governance, political oppression, relative poverty,⁵⁶ and lack of education or other basic rights.⁵⁷ However, these factors can be pointed to only as indirect contributors that can be used in assessing the *risk* of radicalization in a particular community, and do not explain why a majority of those in the global Islamist terrorist network are educated members of the middle class.⁵⁸ Groups such as Hamas and Hezbollah provide a variety of social services for their local community, and have effectively become states within a state. Ultimately, terrorism is a tactic employed by the weak to obtain political objectives, and not a natural response to stressful socioeconomic conditions.⁵⁹

Often, the political or religious cause is the vehicle and not the driving force behind the violence. Terrorism is a means of communicating grievances when a political system is closed and there are no other channels for expressing discontent. Al Qaeda’s opportunism is dependent on existing, exploitable grievances throughout the postcolonial Muslim world that the United States cannot rectify alone.

Alliances and International Relations

International cooperation in law enforcement and intelligence is essential to track funding, disrupt planning, and prevent future attacks, as well as to investigate, capture, and prosecute terrorists. The international community is only as strong as its weakest link.⁶⁰ The United States’ most important allies in the war on terror—countries with majority Muslim populations—face domestic backlash from allying openly with the United States in its perceived war against Islam; they thus do not prioritize counterterrorism in their national security assessments, despite the fact that most attacks are conducted within their borders. Although multilateral counterterrorism mechanisms have been established since 9/11, there remains a lack of consensus in the international community about the threat posed by Islamist terrorism.⁶¹ European allies have shied away from using the term “war on terror” for legal reasons. They have also been reluctant to freeze assets of charities that are known to fund Hamas and Hezbollah

place in “free” countries as opposed to those that were “partly free” or “not free” (Eric Rosand, “Global Terrorism: Multilateral Responses to an Extraordinary Threat,” Coping with Crisis Working Paper Series, [International Peace Academy, April 2007, 3).

⁵⁶ That is, when an individual becomes poorer, and has nothing to do with constant levels of abject poverty.

⁵⁷ Population trends like a youth bulge, reactions to rapid modernization and globalization, and changes in the international politics also contribute. Peter Bergen and Swati Pandey debunk the myth that Islamic schools, called madrassas (literally translated as school) are breeding grounds for terrorism, indoctrinating youth with violent interpretations of Islam. See Peter Bergen and Swati Pandey, “The Madrassa Myth,” *New York Times*, June 14, 2005.

⁵⁸ Many al Qaeda network terrorists are middle class with backgrounds in the sciences, especially engineering. See Diego Gambetta and Steffen Hertog, *Engineers of Jihad* (Oxford: Oxford University Department of Sociology, 2007), <http://www.nuff.ox.ac.uk/users/gambetta/Engineers%20of%20Jihad.pdf>.

⁵⁹ See Laila Bokhari, et. al., “Paths to Global Jihad: Radicalization and Recruitment to Terror Networks,” Proceedings from a FFI Seminar (Oslo, March 15, 2006);

http://www.mil.no/multimedia/archive/00077/Paths_to_global_jiha_77735a.pdf. Marc Sageman found that there is no organizational push for recruitment from above; it happens from below (Sageman, *Understanding Terror Networks* [Philadelphia: University of Pennsylvania Press, 2004]). Regarding Osama bin Laden’s own radicalization, tribal notions of loyalty and vengeance offer a sociocultural explanation. For more see Michael Scheuer, *Through Our Enemies’ Eyes: Osama bin Laden, Radical Islam, and the Future of America* (Washington, DC: Potomac Books, 2006); Richardson, *What Terrorists Want*, 38–70.

⁶⁰ Rosand, “Global Terrorism: Multilateral Responses,” 9.

⁶¹ *Ibid.*, 5. Also see Lee Hamilton et al., “Improving U.S. and Coalition Counterterrorism Capabilities,” in Rosenthal, ed., *State of Struggle*, 11–19.

recruitment efforts, because the European Union views Hezbollah as a political party.⁶² Ultimately this split reflects a divergence in perceptions of the threat and appropriate responses. The United States also relies on allies with a strong security apparatus such as Egypt, Jordan, and Saudi Arabia to capture and detain terrorists. However, these governments maintain power by repressing certain groups in their societies. They have been criticized for torture and other human rights violations. Not coincidentally, many Islamist terrorists come from these countries. On the other hand, lack of law enforcement, intelligence, and military capacity among many states—especially in Africa—has aided terrorist movement, recruitment efforts, and training through the creation of safe havens in “ungoverned areas.”⁶³ U.S. capability is needed to secure these ungoverned areas, but Washington lacks leverage and authority in many parts of the world and needs strengthened allies to step up instead. No less essential than allies’ capacity building is building a consensus on the threat that terrorism poses, and on the best practices to combat terrorists and the conditions that create them.

Soft Power in the Struggle

The sympathetic Muslims of al Qaeda’s outer circle are targeted by the terrorist’s information campaign to fill the ranks of the core, allies, and affiliates—or to be so inspired as to establish their own successor groups. In addition to addressing the material grievances of the fourth circle, the U.S. government has set out to defeat enemy ideas. Within the framework of counterinsurgency, competition for public opinion is the ultimate objective (the “battle for hearts and minds”).⁶⁴ This objective cannot be achieved through military strength. A solution involves a range of nonmilitary capabilities applied in concert with the judicious use of force.

According to a 2008 Defense Science Board study on the subject, “strategic communication is critically important to the success of every strategy and the wise use of all elements of national power.”⁶⁵ Success will require deep cultural comprehension, awareness that actions speak louder than words, institutionalized connections between government and civil society in the United States and abroad, and a durable model for strategic direction.⁶⁶

U.S. strategic communications have not yet been institutionalized at the national level. A National Defense University study points out that the real impediment to devising a U.S. values projection campaign is a lack of national consensus on what U.S. values are.⁶⁷ Strategic communications highlight the changing nature of diplomacy. Today, the distinction between domestic and foreign strategies is disappearing, and responsibility falls largely on the private sector to shape the U.S. message. The United

⁶² Byman, *The Five Front War*, 209.

⁶³ Rosand, “Global Terrorism: Multilateral Responses,” 6. The al Qaeda expert Michael Scheuer finds cause for alarm in bin Laden’s recent mentioning of Darfur, noting that al Qaeda might perceive the presence of U.S. or UN peacekeeping forces as an occupation of Muslim lands by the infidel, which would call for Muslims to wage holy war to cast out the foreigners. Michael Scheuer, “Al Qaeda Triangle (Jamestown Foundation)” (lecture given in Washington, DC on December 5, 2007), http://jamestown.org/events_details.php?event_id=43

⁶⁴ For a discussion on hearts and minds, see Lawrence Freedman, “Using Force for Peace in an Age of War,” in *Leashing the Dogs of War: Conflict Management in a Divided World*, ed. Chester A. Crocker, Fen Osler Hampson, and Pamela Aall (Washington: U.S. Institute for Peace, 2007), 245–64.

⁶⁵ Defense Science Board, “Taskforce on Strategic Communication,” U.S. Department of Defense (January 2008), p. x. http://www.acq.osd.mil/dsb/reports/2008-01-Strategic_Communication.pdf.

⁶⁶ *Ibid.*

⁶⁷ William M. Darley, “The Missing Component of U.S. Strategic Communications,” *Joint Force Quarterly*, no. 47 (4th quarter 2007): 109–13.

States in fact represents an array of competing values that are ripe for exploitation by an enemy that, in contrast, advertises a clear, universal ideology.

Al Qaeda's highly developed propaganda machine, based in Pakistan, is skilled at exploiting diverse and distant terrorist and insurgent acts, framing events to fit their own narrative and thereby win over a global audience. Osama bin Laden's deputy, Ayman al-Zawahiri, stresses "that more than half of this battle is taking place in the battlefield of the media. And that we are in a media battle in a race for the hearts and minds of our Umma [Muslim community]." ⁶⁸ Al Qaeda's network relies heavily on the Internet, using it to strategically communicate with different audiences but mainly to justify its operatives' behavior within a historic or religious context to win the target audience's favor in the aftermath of an attack. ⁶⁹ Bruce Hoffman points out that "propaganda doesn't have to be true to be believed: all that matters is that it is communicated effectively and persuasively—precisely the two essential components of information operations that al Qaeda has mastered." ⁷⁰ While the "jihadist online media campaign" mostly targets militants, a newly emerging outreach strategy is aimed at different groups and individuals, specifically in the West. ⁷¹

Despite the unity of message that is projected, exploitable divisions exist among the enemy. Al Qaeda's global network is composed of a number of diverse individuals and groups that have varying levels of commitment to al Qaeda's ideology and goal of establishing a Caliphate that unites the entire Muslim world. ⁷² Though al Qaeda's war is being waged by a number of terrorist groups, they do not all share transnational goals. Many in the Islamist terrorist network were highly critical of al Qaeda for "waking the sleeping beast" on 9/11, since that event triggered U.S. retaliation that put many terrorist organizations on the run. If it exists, cooperation between al Qaeda's network and the Iran-Hezbollah-Hamas network would act as a force multiplier to both groups. ⁷³ Though its radical ideology brands Shi'ites as infidels, al Qaeda's core leadership has discouraged inflaming tensions between Shi'ites and Sunnis, realizing that the short-term goals of casting out common enemies (the United States, Israel, and other regimes that support their policies) from Muslim lands demands a united front. In 2005, Ayman al-Zawahiri wrote to Abu Mus'ab al-Zarqawi in Iraq, imploring him to put off the conflict with the Shi'ites in order to maintain the support of the broader Muslim community there until the United States has been defeated. ⁷⁴

⁶⁸ Letter from al-Zawahiri to al-Zarqawi, July 9, 2005; translated by the Office of the Director of National Intelligence, http://www.globalsecurity.org/security/library/report/2005/zawahiri-zarqawi-letter_9jul2005.htm.

⁶⁹ Hanna Rogan, *Al Qaeda's Online Media Strategies: From Abu Reuters to Irhabi 007* (Norwegian Defence Research Establishment (FFI), 01.12.2007), 36.

⁷⁰ Hoffman, *Inside Terrorism*, 283.

⁷¹ For more information on Al Qaeda's media strategy, see Hanna Rogan, *Al Qaeda's Online Media Strategies: from Abu Reuters to Irhabi 007*, Norwegian Defence Research Establishment (FFI)

⁷² Al Qaeda pledges to restore the pure Muslim community (*Ummah*) of the early Caliphate through a violent rejection of the modern world order. The first stage of achieving this is to cast out the "far enemy" (the U.S.U.S.) from Muslim lands by exhausting the U.S.U.S. in "bleeding wars." The second stage is to topple Arab regimes, destroy Israel, and restore Sha'ria law, creating a pan-Islamic state. The third and final stage is to settle the score with Shi'a Muslims (this stage must come last, since Shiite support will be essential to complete stages 1 & 2). For more on al-Qaeda's goals, see Scheuer; "al-Zawahiri's September 11 Video."

⁷³ Some experts assume that this cooperation is already under way. Others, such as Daniel Benjamin and Steven Simon, point out that while al Qaeda members trained with Hezbollah during the 1980s, "there is little evidence that a long-term bond between the Sunni and Shiite groups was ever formed" and there is little impetus for Hezbollah to contribute to al Qaeda's battle with the United States (Benjamin and Simon, *Age of Sacred Terror*, 128).

⁷⁴ Letter from al-Zawahiri to al Zarqawi, July 9, 2005.

The Department of Defense has increasingly expanded the scope of its mission and is devoting assets to instruments of “soft power,” recognizing their strategic benefits. Public opinion of the U.S. military dramatically improved in the aftermath of successful humanitarian relief efforts in Indonesia and Pakistan in 2005. A recent CSIS report, *Integrating 21st Century Development and Security Assistance*, states, “The DoD has assumed an expanding role in counterterrorism, capacity building, post-conflict operations, and humanitarian assistance. . . . From 2002 to 2005, DoD’s share of U.S. official development assistance increased from 5.6 to 21.7 percent.”⁷⁵ However, there are limits to the military’s ability to provide aid and humanitarian assistance, and some missions require the involvement of other institutions. U.S. Secretary of Defense Robert Gates’s November 2007 call for increased funding of the diplomatic corps of the State Department is a telling development that acknowledges the current shortfalls of the U.S. campaign. Gates also urged the creation of new institutions for 21st-century challenges, especially in the area of information operations.

Emerging Threats

Although terrorism is unpredictable by nature, certain trends and tactics of this modern wave are very likely to continue. Religion is a powerful ideology, and may continue to be the standard under which future terrorists rally. Suicide bombing will definitely remain a preferred tactic, because it is difficult to counter or detect and confers legitimacy on an organization, aiding recruitment. The number of female suicide bombers has risen even though al Qaeda, Hezbollah, and others have been reluctant, on religious grounds, to openly endorse their actions.⁷⁶

Terrorists’ modus operandi is typically determined by the convergence of how likely they are to succeed and how “spectacular” the attack will be. That no spectacle on the scale of 9/11 has occurred since 2001 does not mean that plans for such an attack are not under way. During the transition period since al Qaeda lost its sanctuary in Afghanistan, it has concentrated on sustaining a series of low-level attacks on soft targets. New trends suggest that affecting the global economy has been made a priority. Attacks on Iraq’s critical infrastructure have increased since 2004, when bin Laden called for targeting energy infrastructure, the “hinges of the world economy.” In 2006, Saudi security forces narrowly prevented an al Qaeda attack on the large Abqaiq oil processing facility, through which 60 percent of Saudi oil passes on its way to consumers in the rest of the world.⁷⁷

The pursuit of CBRN will continue, as will the desire to inflict mass casualties.⁷⁸ The reasons that terrorists pursue CBRN capability are widely debated. Some analysts insist that these groups are aggressively seeking a nuclear weapon and will detonate the device once it is procured and rendered operational. Others believe that their primary purpose is to facilitate blackmail and to gain the status that

⁷⁵ Robert Andrews, Mark Kirk, Kathleen Hicks, and J. Stephen Morrison, *Integrating 21st Century Development and Security Assistance* (Washington, DC: CSIS Press, January 2008), vi.

⁷⁶ Female suicide bombers have been used by the Tamil Tigers and the PKK (Partiya Karker Kurdistan, or Kurdistan Worker’s Party) for many years, but have only just begun to be used by radical Islamist groups. Sheikh Yassin, the spiritual leader of Hamas, said that Muhammad welcomed a woman’s right to wage jihad. See Richardson, *What Terrorists Want*, 120–24.

⁷⁷ Alex Schmidt, “Terrorism and Energy Security,” in Ellis, ed., *Terrorism: What’s Coming*, 28–36.

⁷⁸ For a discussion of terrorist use of non-conventional weapons, see Hoffman, *Inside Terrorism*, 267–81. Also see Lee Hamilton et al., “Preventing Terrorist Attacks with Nukes, “Dirty Bombs,” Germs, and Chemicals,” in Rosenthal, ed., *State of Struggle*, 29–39.

is certain to be conferred on whatever groups succeed in acquiring this capability. Still others question whether this level of annihilation suits the objectives of terrorist networks. Terrorist use of CBRN and infliction of mass casualties could alienate their key constituency, potentially weakening or destroying the organization. As the al Qaeda movement becomes more decentralized, it becomes increasingly dependent on diverse actors with divergent aims who may or may not act in the interest of the core. This decentralized structure could precipitate the movement's self-destruction. Al-Zarqawi's violent, divisive activities in Iraq were responsible for al Qaeda's strategic losses in Anbar, exemplifying the hazards that are symptomatic of al Qaeda's approach following 9/11. In any event, steps must be taken to minimize the likelihood that terrorists acquire or choose to detonate a nuclear device. These steps include securing loose fissile material, denying its use through defensive measures, and deterring the potential state suppliers.

PROMOTE E3 AND HUMAN RIGHTS

Promote Economic, Environmental, and Energy Security, as Well as Good Governance, Internal Stability, and Human Rights

- The visual layout of the poster:
 - The main map, occupying much of the upper half of the poster, depicts the geographic location of recent conflicts, identifies weak/fragile states with governance challenges, and depicts the main nontraditional security drivers of instability.
 - States are categorized by strength of government, with “sustainable” states at one end of the spectrum and “crisis” states at the other.
 - Key drivers of instability are indicated by geographic location and include the following:
 - Water Stress (access and quality).
 - Demographic Stress (high fertility rates).
 - Hunger and Famine.
 - Crop Decline (soil erosion, desertification).
 - Coastal Risk (climate change and environmental degradation).
 - Multiple drivers overlap and intersect in “high-risk zones.”
 - The three areas of E3 security are represented by maps at the bottom of the poster.
 - Economic Security depicts global “GDP density.”
 - Total economic activity is mapped by geographic location.
 - Relative concentrations and absence are highlighted.
 - Environmental Security depicts environmental performance globally, from a state-centric perspective.
 - Each state is rated against environment performance targets as determined by the 2006 Environmental Performance Index.
 - States are depicted on a spectrum of green (good) to red (poor) on the basis of individual performance, with the color scheme also highlighting regional trends in meeting environmental goals.
 - Energy Security depicts the global oil flows between states and regions of major energy production and consumption.
 - The second additional chart compares global oil demand in 2004 and the projected demand in 2030.
 - Human Rights and Human Security outlines the interactions of E3 security at various levels, reflecting a new understanding of security, informed by security at the levels of the
 - Individual.
 - Family/Community.
 - Nation-State.
 - International System.
 - Additionally, this section lists the various elements that constitute the widely accepted definition of human security:
 - Economic Security.

- Food Security.
 - Health Security.
 - Environmental Security.
 - Personal Security.
 - Community Security.
 - Political Security.
- Redefining “Security Issues”
 - 9/11 Commission Co-Chair Lee Hamilton has observed, “[O]ur collective security depends on the security of the world’s most vulnerable places.”
 - Nearly all post–Cold War conflict has been at either civil, sub-state, or intrastate levels (with only regional impacts).
 - The nature of emerging conflict in the 21st century, however, increasingly affects the entire international system.
 - Afghanistan’s civil war and the problem of radical Islamists in the Arab world translated into the attacks of 9/11.
 - Nontraditional, nonmilitary, or distant vectors of instability translate into real security threats because of the globalized system.
 - The challenge the U.S. faces is to broaden the understanding of security to include a full range of factors and actors that can affect stability.
 - Secretary Gates has observed: “We must focus our energies beyond the guns and steel of the military. . . . [W]e must also focus our energies on the other elements of national power that will be so crucial in the coming years.”
 - By identifying all factors associated with conflict and tracking their interaction, “high-risk areas” where conflict is most likely to occur can be identified.
 - Describing the 21st-century security environment: in addition to the persistence of violent conflict, the following factors, with associated trends, compose the security environment.
 - Economic Security
 - 4.9 billion people live in countries where average income—measured by GDP per person—increased between 1980 and 2000.
 - Vast income inequalities persist between countries, and increasingly within them.
 - For example, assets of the world’s 200 wealthiest individuals exceed \$1 trillion; yet 3 billion people live on less than \$2 per day and 1.3 billion live on less than \$1 per day.
 - The poverty trap in the poorest states persists.
 - These states export instability to the region and the world: they are epicenters of pandemic and epidemic disease outbreak, safe havens for terrorists, etc.
 - William Easterly argues that the \$2.3 trillion spent by the West on foreign aid over the past five decades has essentially achieved nothing.
 - Recent successes in development are bottom-up: call for less central government involvement, more business-friendly regulation.
 - Corruption and the black-market economy continue to grow far faster than the licit, international economy.
 - Environmental Security
 - Kofi Annan has observed, “[O]ur fight against poverty, inequality, and disease is directly linked to the health of the earth itself.”
 - In developing countries, people are more dependent on the environment for all aspects of their lives and less able to cope with environmental change.
 - Even in large, developed countries, environmental degradation can strongly influence human security and the economy.

- For example, environmental damage to Louisiana’s offshore marshes over the past 70 years significantly contributed to the catastrophic impact of Hurricane Katrina.
 - The large number of people in the world transitioning to “first world–style” existences is also furthering environmental stress.
 - E. O. Wilson has estimated that humanity would need four planet Earths to generate the raw resources necessary to provide all of the world’s population with an American-style existence.
 - For example, Goldman-Sachs predicts that in India, from 2007 to 2020 GDP per capita in U.S. dollar terms will quadruple: Indians will also consume about five times more cars and three times more crude oil.
 - Enormous challenges lie ahead in freshwater resources.
 - By 2050, 54 countries, home to almost half the global population, will find their capacity to meet their domestic, industrial, and agricultural water demands seriously constrained.
 - In an era of unprecedented shortages, water could be a driver of major interstate conflict.
 - Climate change is best understood as an accelerant of environmental challenges and a multiplier of vectors of instability.
 - Climate change will affect the planet’s natural systems as well as human settlements around the globe.
 - Under the most commonly accepted scenario for climate change, by 2040 the global temperature will rise 1.3°C above the 1990 average and global mean sea level will increase by 0.23 meters.
 - More frequent, severe weather events anticipated.
 - By 2025, 2.75 billion people will live within 60 miles of the coast
 - Increased risk of harm from events such as hurricanes, flooding, and non-climate-change-related disasters such as tsunamis.
- Global Health
 - The potential of a global pandemic of a contagious disease is a grim reality looming over all states.
 - In the event of an influenza pandemic, it is unlikely that countries will share treatments.
 - Thus there will be far more deaths in the developing than developed world (where vaccinations will also run short).
 - As a result, trust between developed and developing world could be obliterated.
 - A Lowy Institute study found that a mild pandemic would cost the world 0.8 percent of GDP or \$330 billion in lost economic output.
 - A severe pandemic would cost global GDP \$4.4 trillion—12.6 percent of the total.
 - Infectious diseases are one of the leading causes of human deaths globally, killing almost 11 million people in 2002.
 - HIV/AIDS is the leading cause of death in many sub-Saharan African states.
 - The epidemic has significantly reduced the readiness of state security forces and affected states’ governing capacities.
 - According to the National Intelligence Council, the hardest-hit countries (those where 20 percent of the population is affected) have already experienced a 1 percent annual decline in GDP.
- Energy Security

- The opportunities offered by crises are likely the most effective way to quickly increase American soft power, as demonstrated by the 2004 tsunami relief efforts.
- (2) U.S. security planners must be prepared to address the changing threat paradigm.
 - National security capabilities must be built up to respond to and shape the international environment across a range of nontraditional vectors of instability.
 - The military must remain prepared for major combat operations but must also be prepared for high-frequency nontraditional deployments.
- (3) Decisionmakers need keen awareness and understanding of the nature and extent of today's challenges, and the international community must also adapt and work together.
 - This is an era of overpopulation and global resource exhaustion that has no historical equivalent, and no past lessons are necessarily applicable.
 - A consensus must be created among policymakers at home and abroad about nontraditional threats, a task that will be difficult and require compromise.
 - The collective action of the international community will be necessary to confront and overcome these new challenges.

PROMOTE E3 AND HUMAN RIGHTS

Promote Economic, Environmental, and Energy Security, as Well as Good Governance, Internal Stability, and Human Rights

*Samuel J. Brannen, John J. Burgeson,
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In December 2004, the world witnessed one of the worst natural disasters in human history unfold across the South Pacific. A tsunami caused by an offshore, undersea earthquake resulted in 231,452 people dead, 1.7 million displaced, and between 5 and 6 million people in need of food, water, and medical supplies.¹ The tsunami devastated coastal communities across 12 countries in South and Southeast Asia, and even on the other side of the Indian Ocean in parts of coastal Africa.²

With military assets in place in the region, the United States responded quickly and decisively, using its military not to project force but to reassure traumatized populations and prevent a disaster from becoming a crisis.³ The positive effects of the U.S. response were quantified by a poll of the regional populations, which revealed a marked reversal in public opinion.⁴ Key findings showed that Indonesians, for the first time in four years, had attitudes toward the United States more “favorable” than “unfavorable.” In addition, the inverse trend was demonstrated regarding al Qaeda leader’s Osama Bin Laden and terrorism in general, with support dropping to its lowest level since 9/11.⁵ U.S. military cooperation with the Indonesian government also resulted in security gains for the country, effectively softening the image of the Indonesian armed forces and projecting a sense of competence into a region (Aceh) that was largely outside central government control and home to rebel factions.⁶ Eight months after the tsunami, the Indonesian government and rebels in Aceh signed a peace accord, bringing to an end nearly 30 years of conflict.⁷

¹ Daniel Shepard, ed., *Survivors of the Tsunami: One Year Later* (New York: United Nations Development Programme, 2005), 3. <http://www.undp.org/tsunami/UNDP-Tsunamireport-final.pdf>.

² *Ibid.*, 3. The earthquake that generated the great Indian Ocean tsunami of 2004 is estimated to have released the energy of 23,000 Hiroshima-type atomic bombs, according to the U.S. Geological Survey (USGS).

³ America’s quick response and unique capacity for assistance provided critical humanitarian relief and helped prevent the crisis from deepening. The specialized hospital ship USNS Mercy replaced the USS Lincoln in February of 2005 in order to provide specialized medical assistance. This was the first U.S. deployment of such a vessel for a humanitarian mission, emphasizing the U.S. understanding that prolonged humanitarian engagement would have lasting impact. See Samantha L. Quigley, “DoD Tsunami Relief Efforts in Transition,” *American Forces Press Service*, January 27, 2005. <http://www.defenselink.mil/news/newsarticle.aspx?id=24251>

⁴ *One year Later: Humanitarian Relief Sustains Change in Muslim Public Opinion*, (Washington, DC: Terror Free Tomorrow, 2006), 1,

<http://www.terrorfreetomorrow.org/upimagestft/INDONESIA%202006%20Poll%20Report.pdf>

⁵ *Ibid.*, 2.

⁶ *Ibid.*

⁷ “After Tsunami, A Peace Deal,” *Christian Science Monitor*, August 15, 2005.

The scale and decisiveness of these operations offered a preview of the future. In the 21st century, the number of tools of national power has increased significantly. As Secretary of Defense Robert Gates has observed, “We must focus our energies beyond the guns and steel of the military. . . . We must also focus our energies on the other elements of national power that will be so crucial in the coming years.”⁸

Since the end of the Cold War, the dynamics of conflict have changed dramatically. Almost all of the violent post–Cold War conflicts have been either civil, sub-state conflicts or intrastate conflicts with regional impacts.⁹ Michael Klare, a professor of security studies, observes, “Many of the most severe and persistent threats to global peace and security are arising not from conflicts between major political entities but from increased disorder within states, societies and civilizations along ethnic, racial, religious, linguistic, caste or class lines.”¹⁰ Disorder within states, along with the interconnectivity attending globalization, necessitates that the future security environment not be viewed through the traditional military and state-centric lenses. Recognizing the influence of nonmilitary drivers of conflict, the United Nations Development Program’s 1994 *Human Development Report* expands the conventional security agenda to include not only violent conflict but also threats of hunger, disease, and natural disaster.¹¹ These threats—traditionally treated separately from paradigms of international security—are responsible for the deaths of far more people than war, genocide, and terrorism combined.¹²

In an ever more interconnected world, threats are no longer contained within states. Globalization has become a powerful force for promoting economic prosperity, political freedom, and peace. Yet this same interconnectivity has also produced new and complex threats, as those unable or unwilling to integrate find themselves increasingly vulnerable and potentially disenfranchised.¹³ In order to meet the challenges of the 21st century, the security agenda needs to be broadened to include nonmilitary drivers of conflict, while continuing to adapt to the globalized nature of security. As Lee Hamilton, 9/11 Commission co-chair, declares, “[O]ur collective security depends on the security of the world’s most vulnerable places.”¹⁴ Ensuring that security must include consideration of economic, environmental, and energy security, along with good governance and human rights.

⁸ Robert M. Gates “Landon Lecture (Kansas State University)” (speech given in Manhattan, Kansas at Kansas State University on November 26, 2007), <http://www.defenselink.mil/speeches/speech.aspx?speechid=1199>.

⁹ The only conventional interstate conflicts include the Iraqi invasion of Kuwait and subsequent international response, the territorial war between Ethiopia and Eritrea, the lingering conflict between India and Pakistan, and the U.S.-led intervention of Iraq in 2003. See Michael E. Brown, “New Global Dangers,” in *Leashing the Dogs of War: Conflict Management in a Divided World*, ed. Chester A. Crocker, Fen Osler Hampson, and Pamela Aall (Washington: U.S. Institute for Peace, 2007), 39-51.

¹⁰ Michael T. Klare, “Redefining Security: The New Global Schisms,” in *Globalization and the Challenges of a New Century*, ed. Patrick O’Meara, Howard D. Mehlinger, and Matthew Krain (Bloomington: Indiana University Press, 2000), 133.

¹¹ United Nations Development Programme, *Human Development Report 1994* (New York: Oxford University Press, 1994) http://hdr.undp.org/en/media/hdr_1994_en.pdf.

¹² “Human Security Now” (Commission on Human Security, New York), 2003, [http://www.reliefweb.int/rw/lib.nsf/db900SID/LGEL-5MCML7/\\$FILE/chs-security-may03.pdf?OpenElement](http://www.reliefweb.int/rw/lib.nsf/db900SID/LGEL-5MCML7/$FILE/chs-security-may03.pdf?OpenElement).

¹³ Globalization is often characterized as a multi-dimensional phenomenon. Economic interactions are opening vast new markets as trade, private capital and investment flows are increasingly global. Simultaneously, information technologies, along with other advancements, are developing rapidly and creating new avenues of communication and transfer. See Joseph E. Stiglitz, *Globalization and Its Discontents* (New York: W.W. Norton, 2002).

¹⁴ Lee Hamilton comments at symposium on “The Dangerous Connection—Failed and Failing States, WMD, and Terrorism: Initiatives Proposed by the United Nations Secretary General and the High Level Panel on Threats, Challenges, and Change” (Woodrow Wilson International Center for Scholars, Washington, D.C., April 25, 2005).

Economic Security

The massive reductions in global poverty made over the past decades—especially in East Asia—have been driven by the collapse of communism (or radical economic change under communism, in the case of China) and the growth of free markets and international trade. The economist Jeffrey Sachs finds that approximately “4.9 billion people live in countries where average income—measured by GDP per person—increased between 1980 and 2000.”¹⁵ But, as Sachs also argues, the story of global economic growth is mixed. Vast income inequalities persist between countries and, increasingly, within them.¹⁶ The assets of the world’s 200 wealthiest individuals exceed \$1 trillion; yet 3 billion people live on less than \$2 per day, and 1.3 billion live on less than \$1 per day.¹⁷ There are 1,125 billionaires in the world, with a combined net worth of \$4.4 trillion.¹⁸ Income inequality is especially pronounced in economically vibrant middle-income countries such as China, India, and Brazil. For example, in 2006 China had 300,000 millionaires among its population; but 400 million people—nearly one-third of the country’s population—live on less than \$2 per day.¹⁹ Moscow is home to the most billionaires of any city in the world, with 87;²⁰ but Russia ranks 79th worldwide in gross national income per capita, at \$5,780.²¹

Of gravest concern are those countries and segments of the population caught in the “poverty trap” in which savings and development are impossible and negative economic growth rates prevail.²² The economist Benjamin Friedman writes,

The most pressing economic problem of our time is that so many of what we usually call “developing economies” are, in fact, not developing. It is shocking to most citizens of the industrialized Western democracies to realize that in Uganda, or Ethiopia, or Malawi, neither men nor women can expect to live even to age forty-five. Or that in Sierra Leone 28 percent of all children die before reaching their fifth birthday. Or that in India more than half of all children are malnourished. Or that in Bangladesh just half of the adult men, and fewer than one fourth of adult women, can read and write.²³

The influential scholar and former State Department official Susan Rice observes that the threat posed by these poorest states and regions has true regional and geopolitical implications: “Low-income states are often weak states that lack effective control over substantial portions of their territory and resources.”²⁴ These states, she argues, are terrorist safe havens, incubators for radicalism, and points of origin for

¹⁵ Jeffrey Sachs, *The End of Poverty: Economic Possibilities for Our Time* (New York: Penguin, 2005): 51.

¹⁶ The World Bank, *World Development Report 2006: Equity and Development* (Washington, D.C.: World Bank, 2006), <http://go.worldbank.org/FFOT9IETN0>.

¹⁷ Shanta Sharma, “Impact of Globalization on World Society,” *Academic Forum* 22 (2004–05): 29, <http://www.hsu.edu/uploadedFiles/Faculty/AFO/22/Sharma.pdf>.

¹⁸ Francesco Guerrera, “Buffett Overtakes Gates as Richest Person,” *Financial Times*, March 6, 2008.

¹⁹ C. Fred Bergsten et al., *China: The Balance Sheet* (New York: Public Affairs, 2006), 6.

²⁰ Guerrera, “Buffett Overtakes Gates.”

²¹ World Bank, “World Bank Development Indicators 2007,”

<http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf>.

²² Sachs, *The End of Poverty*, 56–57.

²³ Benjamin Friedman, “Globalization: Stiglitz’s Case,” *New York Review of Books*, August 15, 2002, citing data from the 1999/2000 World Development Report, Table 2, <http://www.nybooks.com/articles/15630>.

²⁴ Susan Rice, “The Threat of Global Poverty,” *The National Interest*, no. 83 (Spring 2006): 77.

epidemics and pandemics. In addition, the most significant root cause of political violence is the failure of economic development. As a leading expert in the economics of conflict, Paul Collier, notes,

Countries with low, stagnant, and unequally distributed per capita incomes that have remained dependent on primary commodities for their exports face dangerously high risks of prolonged conflict. In the absence of economic development neither good political institutions, nor ethnic and religious homogeneity, nor high military spending provide significant defenses against large-scale violence.²⁵

The question, then, has been how to end this poverty that is a threat to global and regional stability, and that is puzzling in a world in which so much wealth is available, though concentrated so disproportionately. The development economist William Easterly makes the shocking, and empirically based, claim that “the West spent \$2.3 trillion on foreign aid over the last five decades and still had not managed to get twelve-cent medicines to children to prevent malaria deaths[,] . . . four-dollar bed nets to poor families[, or] . . . three dollars to each new mother to prevent five million child deaths.”²⁶ Easterly argues, in short, that Western-led attempts to spur development in countries have failed. Development, Easterly and others contend, comes about by internal, indigenous processes that grow and develop the private sector and small business. In other words, organizations from the U.S. Agency for International Development (USAID) to the World Bank have been extremely inefficient in realizing the development they seek to achieve in countries around the globe. Along with the International Monetary Fund (IMF), these organizations have been much maligned for the apparently unfair economic approaches they promote (structural reforms that create oligarchies) and their failure to lift larger segments of populations from poverty.²⁷ Nancy Birdsall and Arvind Subramanian suggest that the World Bank should transition its mission from being a lending institution to being an advisory institution and a center that promotes the development of global public goods such as effective climate change policy.²⁸

Recent successes in development, such as micro-finance (pioneered by the Grameen Bank in Bangladesh), demonstrate viable alternatives to top-down development initiatives, though there are questions about their scalability. Ultimately, tapping into larger markets and financial flows is likely the key to development. In its innovative *Doing Business* reports, the International Finance Corporation compares business regulation and the protection of property rights in countries around the world. Its findings are clear: the better the protection of property rights in a country and the friendlier the regulations are to small and medium enterprise, the more dynamic the economies and the greater the economic development.²⁹

A significant obstacle to development in many countries continues to be illicit trade. The interconnectivity and technological advances associated with globalization have fostered a new and robust

²⁵ Paul Collier, *Breaking the Conflict Trap: Civil War and Development Policy*, (New York: Oxford University Press, 2003), 53.

²⁶ William A. Easterly, *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good* (New York: Penguin Press, 2006).

²⁷ Friedman, “Globalization: Stiglitz’s Case.”

²⁸ Nancy Birdsall and Arvind Subramanian, “From World Bank to World Development Cooperative,” Center for Global Development Essay (October 2007).

²⁹ The World Bank and the International Finance Corporation, *Doing Business in 2008: Comparing Regulation in 178 Countries* (Washington, D.C.: The World Bank, 2007).

black market administered by global networks of international criminal actors. As described by Moisés Naím, a former Venezuelan minister of trade and industry and the editor of *Foreign Policy* magazine, newly established interconnectivity has fostered the development of a pervasive global criminal economy that relies on a technologically advanced global supply chain specializing in human trafficking (Eastern Europe), illicit drugs (Asia and South America), pirated goods (Southeast Asia), arms (Central Asia), and money laundering. Naím estimates that the value of this economy is between \$2 and \$3 trillion a year, or as much as 10 percent of the total global economy, with a rate of growth estimated to be seven times the rate of legitimate world trade.³⁰ This activity creates significant systems-level disruption by distorting markets, discouraging investment, feeding state corruption, arming insurgent groups, and enabling symbiotic relationships to form between terrorist networks.³¹

The question that must be answered against this backdrop of informal corruption and formal inequality is how to harness the genius of capitalism in a way that more equitably and sustainably distributes the results. In 2005, global cross-border capital flows topped \$6 trillion, 80 percent of which passed between the United States, United Kingdom, and Euro area, with only 10 percent going to developing markets.³² At the Davos 2008 World Economic Forum, Microsoft founder and mega-philanthropist Bill Gates called for a new age of “creative capitalism,” insisting, “We have to find a way to make the aspects of capitalism that serve wealthier people serve poorer people as well.”³³ Achieving this goal remains illusive, however.

Environmental Security

Former UN Secretary-General Kofi Annan has observed, “[O]ur fight against poverty, inequality, and disease is directly linked to the health of the earth itself.”³⁴ It is helpful and accurate to think about the environment as the source of all human health and economic activity. The environmental theorist Paul Ehrlich coined the term “ecosystem services” to encompass not just the medicines and timber provided by nature but the many “processes whose economic value usually goes unconsidered: water filtration, pollination, climate regulation, flood and disease control, and soil formation.”³⁵ In the developing world, the environment is “typically five to 10 times more important as components as national economies for [developing nations.]”³⁶

In developed countries, such as the United States, the environment is also crucial to national security and its degradation is highly costly. To take one recent example, the environmental damage to Louisiana’s offshore marshes over the past 70 years significantly contributed to the catastrophic impact of Hurricane Katrina.³⁷ Healthy offshore marshes would have substantially reduced the storm surge and absorbed more of Katrina’s energy before it hit land.

³⁰ See Moisés Naím, *Illicit: How Smugglers, Traffickers, and Copycats Are Hijacking the Global Economy* (New York: Anchor Books, 2006), 16.

³¹ John Robb, *Brave New War* (New Jersey: Wiley, 2007): 5.

³² McKinsey Global Institute, “Mapping the Global Markets Third Annual Report” (January 2007), http://www.mckinsey.com/mgi/publications/third_annual_report/index.asp.

³³ Robert A. Guth, “Bill Gates Issues Call for Kinder Capitalism,” *The Wall Street Journal*, January 24, 2008: A1.

³⁴ Quoted in Peter Kareiva and Michelle Marvier, “Conservation for the People?” *Scientific American* (October 2007): 38.

³⁵ *Ibid.*, 35.

³⁶ *Ibid.*, 37.

³⁷ *Ibid.*, 36.

Beyond the shadow of a doubt, environmental pressures can drive fragile societies beyond the tipping point, and can create new conflicts as human populations relocate and compete over finite resources. According to the environmental security scholar Thomas Homer-Dixon, the data on the environment and instability shows “that severe resource stress—including water scarcity, forest loss, land degradation, and collapse of coastal fisheries—multiplies the impact of a society’s existing vulnerabilities, including its ethnic cleavages and skewed distribution of land, wealth and power.”³⁸ The conflict in Darfur was caused to a measurable degree by soil depletion (human-managed overgrazing by cattle), a prolonged drought, and a clash of peoples—previously separated geographically—who were suddenly in direct competition for limited resources.³⁹

With these environmental realities in mind, the geographer Jared Diamond reaches a stark conclusion in his historical study of civilizations whose collapse was caused by poor environmental stewardship:

Thus, because we are rapidly advancing along this non-sustainable course, the world’s environmental problems will get resolved, in one way or another, within the lifetimes of the children and young adults alive today. The only question is whether they will become resolved in pleasant ways of our own choice, or in unpleasant ways not of our choice, such as warfare, genocide, starvation, disease epidemics, and collapse of societies. While all of these grim phenomena have been endemic to humanity throughout our history, their frequency increases with environmental degradation, population pressure, and the resulting poverty and political instability.⁴⁰

Keen awareness and scientific understanding of the issues provide the opportunity for real leadership and problem solving. As a leading organization in the field of environmental security argues, “[M]anaging environmental issues and natural resources can . . . build confidence and contribute to peace by facilitating cooperation across lines of tension.”⁴¹ With its technology base and resources, the United States has a true comparative advantage in engaging these issues.

The World Wildlife Fund’s 2006 *Living Planet Report*, a framework to measure human impact on the global environment, finds that “we are using the planet’s resources faster than they can be renewed—the latest data available (for 2003) indicate that . . . our impact upon the planet, has more than tripled since 1961. Our footprint now exceeds the world’s ability to regenerate by about 25 per cent.”⁴² The Millennium Ecosystem Assessment (MEA), a major endeavor to gauge the world’s health involving 1,360 experts from 95 countries, reached similar findings. According to its report, over the past 50 years “humans have changed ecosystems more rapidly and extensively than in any comparable period of time in

³⁸ Thomas Homer-Dixon, “The Straw Man in the Wind,” *The National Interest*, no. 93 (January/February 2008): 27.

³⁹ CNA Corporation, *National Security and the Threat of Climate Change* (Washington, DC: CNA Corporation 2007): 15, <http://securityandclimate.cna.org/report/National%20Security%20and%20the%20Threat%20of%20Climate%20Change.pdf>

⁴⁰ Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking, 2005), 498.

⁴¹ Woodrow Wilson International Center for Scholars, “Environmental Change and Security Program,” http://www.wilsoncenter.org/index.cfm?fuseaction=topics.categoryview&topic_id=1413&categoryid=A82CCAEE-65BF-E7DC-46B3B37D0A3A575F.

⁴² WWF, “Living Planet Report 2006,” (Oakland, CA: Global Footprint Network, 2006): 1.

human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber, and fuel. This has resulted in a substantial and largely irreversible loss in the diversity of life on Earth.⁴³ The MEA warns that although such exploitation of the environment has led in the short term to an increase in living standards for much of humanity, this approach is not sustainable over the long term, and serious nonlinear, unpredictable environmental changes with catastrophic impact are possible as the scale of environmental destruction increases.

The rapid use of nonrenewable resources and the depletion of ecosystems to the point of species extinction are accelerating as much of humanity strives for the lifestyles seen in the developed world. Diamond observes of the present situation:

People in the Third World aspire to First World living standards. They develop that aspiration through watching television, seeing advertisements for First World consumer products sold in their countries, and observing First World visitors to their countries. Even in the most remote villages and refugee camps today, people know about the outside world. Third World citizens are encouraged in that aspiration by First World and United Nations development agencies[.]⁴⁴

To even generate the raw resources necessary to provide all of the world's population with an American-style existence, the scholar E. O. Wilson has estimated that humanity would need four planet Earths.⁴⁵ At present, the skyrocketing demands for resources from our one planet Earth increasingly emanate from among the one-third of the world's population that lives in China and India, newly flush with cash—the success of globalization—and in pursuit of a Western-style middle-class existence. New consumer markets in middle-income countries have emerged over the past two decades, and they are demanding the same lifestyle that Americans and Western Europeans have known for 60 years. Goldman-Sachs predicts that in India, “From 2007 to 2020 . . . GDP per capita in US Dollar terms will quadruple. . . . Indians will also consume about five times more cars . . . and three times more crude oil.”⁴⁶ (That estimate of automobile consumption, and thus demand for petroleum, may be a woeful understatement in light of the 2008 introduction in India of Tata Motors' Nano, the world's cheapest car at \$2,500.)

Another major driver of environmental degradation and resource usage is changing dietary preferences, again driven by demand from middle-income countries. As income rises, so does demand in particular for livestock products (meat and milk). Livestock production already accounts for 18 percent of man-made greenhouse CO₂ emissions—more than all transportation (private and commercial) combined—and is a leading emitter of other greenhouse gases such as methane. Also, “livestock production accounts for 70 percent of all agricultural land and 30 percent of the land surface of the planet.”⁴⁷ In the Amazon, for example, 70 percent of previously forested land is now occupied by pastures, and livestock feed crops account for much of the remaining 30 percent.⁴⁸

⁴³ Millennium Ecosystem Assessment, “Ecosystems and Human Well Being: Synthesis,” (Island Press, Washington, D.C. 2005): 1.

⁴⁴ Diamond, *Collapse*, 495–96.

⁴⁵ John Glassie, “E. O. Wilson,” *Salon*, January 14, 2002, <http://dir.salon.com/story/people/conv/2002/01/14/eowilson/index.html>.

⁴⁶ Goldman Sachs Global Economics Group, “BRICs and Beyond” (New York: Goldman Sachs, 2007), 12.

⁴⁷ Henning Steinfeld et al., *Livestock's Long Shadow: Environmental Issues and Options* (Rome: World Food and Agriculture Organization, 2006), xxi.

⁴⁸ *Ibid.*

Even if the rest of the world stopped pursuing the lifestyle most Americans have enjoyed for the past six decades, producing enough food to feed the planet in the years ahead will prove a major challenge. Environmental degradation (especially soil erosion and depletion), lack of freshwater, and other factors will decrease yields at a rate technology alone cannot compensate for. There are at least 820 million hungry people in the world—essentially no fewer than when leaders at the 1996 World Hunger Summit pledged to reduce that number by half by 2011.⁴⁹ The hungry and malnourished are concentrated heavily in sub-Saharan Africa, followed by South Asia and East Asia. Ninety-nine percent of all food consumed comes from agriculture relying on topsoil, which is lost or contaminated at a growing rate around the globe (10 million hectares per year).⁵⁰ Already, more than one billion hectares of arable land have been affected by human-caused soil erosion. The International Fund for Agricultural Development notes: “In China alone, between 1957 and 1990, the area of arable land was reduced by an area equal to all the crop land in Denmark, France, Germany and The Netherlands combined, mainly because of land degradation.”⁵¹

Exacerbating this problem, the European Union and United States have both legislated a large-scale move to ethanol and other biofuels to replace imported oil. The amount of cropland necessary for biofuel cultivation is driving the food price index skyward (a 37 percent increase in 2007 after a 14 percent increase in 2006).⁵² According to the World Bank, higher demand for biofuels in the United States and the United Kingdom, combined with rising fuel costs, has led to a 75 percent increase in the overall cost of food since 2000. The World Bank argues, “For poor people who often spend more than half their incomes on food, unrelenting increases in the price of staples can be devastating.”⁵³ With current technology, biofuels have the further downside of increasing greenhouse gas emissions more than does the use of traditional hydrocarbons.⁵⁴

Environmental Security: The Freshwater Challenge

Another growing constraint on food production, water availability, may become the most important single future driver of instability. According to the World Resources Institute, “To support the diets of the additional 1.7 billion people expected to join the human population by 2030 at today’s average dietary water consumption would require 2,040 cubic kilometers of water per year—as much as the annual flow of 24 Nile Rivers.”⁵⁵ By 2050, 54 countries, home to almost half of the global population, will encounter serious constraints in their capacity to meet their domestic, industrial, and agricultural water demands.⁵⁶

⁴⁹ Food and Agriculture Organization, “World Hunger Increasing,” October 30, 2006, <http://www.fao.org/newsroom/en/news/2006/1000433/index.html>.

⁵⁰ Tim Radford, “Soil erosion as big a problem as global warming, say scientists,” *The Guardian*, February 14, 2004, <http://www.guardian.co.uk/world/2004/feb/14/science.environment>.

⁵¹ IFAD (International Fund for Agricultural Development) and GEF (Global Environment Facility), “Tackling Land Degradation and Desertification,” January 10, 2008, http://www.ifad.org/events/wssd/gef/gef_ifad.htm.

⁵² Henry I. Miller, “The Global Poor Will Suffer the Worse Ethanol Hangover,” *World Politics Review* (February 27, 2008), <http://www.worldpoliticsreview.com/article.aspx?id=1680>.

⁵³ World Bank, “High Food Prices, A Harsh New Reality,” (February 29, 2008) <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/0,,contentMDK:21665883~pagePK:64165401~piPK:64165026~theSitePK:469372,00.html>.

⁵⁴ *Ibid.*

⁵⁵ Worldwatch Institute, *State of the World 2006* (Washington, DC: Worldwatch Institute, 2006): 51.

⁵⁶ Gardner-Outlaw, T., and R. Engelman. *Sustaining Water, Easing Scarcity: A Second Update* (Washington, DC: Population Action International, 1997), 13.

This water shortage will occur in areas of the world already of key concern: the Middle East and North Africa, sub-Saharan Africa, South Asia, and China. China has 8 percent of the world's freshwater (much of it badly polluted), but 22 percent of the world's people and a surging demand for water resources for agricultural, municipal, and industrial use.⁵⁷ As a result, some experts claim, China may eventually choose to make a play for the massive freshwater and other resources in Siberia and Pacific Russia.⁵⁸

The lack of water in much of the developing world will translate into decreased capacity to govern, large migrations and refugee problems, and widespread civil unrest. As the environmental security scholar Thomas Homer-Dixon asserts, resource stress “causes various forms of social dislocation—including widening gaps between rich and poor[,] . . . weakening of states and deeper ethnic cleavages—that, in turn, make violence more likely.”⁵⁹ Former Commander of U.S. Central Command General Anthony Zinni describes resource-stressed environments as “Petri dishes for extremism and for terrorist networks.”⁶⁰

Experts agree that we have reached a point where the old rules of conflict over resources no longer apply and the causal link between water and instability is clear. According to the researcher Aaron Wolf, no “water wars” have occurred in modern history, and between the years 805 and 1984 C.E. water tensions between riparian states or states straddling the same aquifer resulted in 145 cooperative treaties and “only seven minor skirmishes.”⁶¹ But Wolf believes that we are entering an age of unprecedented water stress in which historical cases no longer have predictive value. Even if water does not directly breed interstate warfare in the future, Wolf argues, water scarcity “already causes enough violence and conflict within nations to threaten social and political stability.” He further suggests that these civil conflicts can easily traverse borders, “becoming tomorrow’s international wars.”⁶²

Decades and even centuries of pollution and water overuse have set the stage for *true* conflict over water in places where its availability becomes an existential question for societies. In *Global Trends 2015* and other works, the National Intelligence Council has identified access to freshwater as a potential source of future international conflict.⁶³ The UK Ministry of Defence stated in its 2007–36 forecast, “Water stress *will* increase, with the risk that disputes over water *will* contribute significantly to tensions in already volatile regions, *possibly* triggering military action and population movements” (emphases in the original).⁶⁴

⁵⁷ Worldwatch Institute, “State of the World 2006: China and India Hold World in Balance,” <http://www.worldwatch.org/node/3893>.

⁵⁸ This based on a comment by a leading international affairs thinker and strategist in a Chatham House rules environment, and by others in various non-attribution settings. Many remain skeptical that China would invade Russia for its resources when it could simply purchase them instead.

⁵⁹ Homer-Dixon, “The Straw Man in the Wind,” 26.

⁶⁰ General Anthony Zinni (USMC, ret.), quoted in General Gordon R. Sullivan, USA (Ret.), et al., *National Security and the Threat of Climate Change* (Alexandria, VA: CNA Corporation, 2007), 31.

⁶¹ Aaron T. Wolf, “Conflict and Cooperation along International Waterways,” *Water Policy* 1, no. 2 (1998): 251–65.

⁶² Sandra L. Postel and Aaron T. Wolf, “Dehydrating Conflict,” *Foreign Policy*, no. 126 (September/October, 2001): 60–67.

⁶³ As “countries press against the limits of available water between now and 2015, the possibility of conflict will increase... Water shortages occurring in combination with other sources of tension—such as in the Middle East—will be the most worrisome.” *Global Trends 2015: A Dialogue about the Future with Nongovernment Experts* (Washington, DC: National Intelligence Council, 2000), 27–28.

⁶⁴ *The DCDC Global Strategic Trends Programme 2007–2036*, 3rd ed. (Swindon, UK: Ministry of Defence, 2006), 28.

Environmental Security: Climate Change

Climate change due to anthropogenic causes is under way, and skyrocketing greenhouse gas emissions related to industrial and other processes that support modern societies and a population of 6.4 billion globally are driving exponential increases in its effects.⁶⁵ Climate change is best understood as an accelerant of environmental challenges and a multiplier of vectors of instability. It will affect the planet's natural systems as well as human settlements around the globe,⁶⁶ causing a degree of distress that will range from the uncomfortable to the catastrophic. Under the most commonly accepted scenario for climate change, by 2040 the global temperature will rise 1.3°C above the 1990 average and global mean sea level will increase by 0.23 meters. More severe, frequent weather events can be expected, and “the most significant climate impacts will occur in the southwestern United States, Central America, sub-Saharan Africa, the Mediterranean region, the mega-deltas of South and East Asia, the tropical Andes, and small tropical islands of the Pacific and Indian Oceans.”⁶⁷

As the climate changes, severe weather events will affect an increasing proportion of humanity. Scientists at the Center for Climate Systems Research at Columbia University have found that by 2025, 2.75 billion people will live within 60 miles of the coast, putting them at increased risk of harm from events such as hurricanes, flooding, and non-climate-change-related disasters such as tsunamis.⁶⁸ Without a doubt, those most disturbed by climate change will be the portion of humanity least equipped to adapt: the poorest countries, groups, and individuals around the globe.⁶⁹ This will be the demographic most concentrated in coastal areas, with the densest settlements and highest rates of population growth.

Global Health

The potential of a global pandemic of a contagious disease is a grim reality looming over all states. Infectious diseases are one of the leading causes of human deaths globally, killing almost 11 million people in 2002.⁷⁰ Diseases such as HIV/AIDS, Ebola, and West Nile virus have recently emerged to ravage populations, while reemerging antibiotic-resistant strains of malaria, cholera, tuberculosis, and other illnesses pose serious challenges to global public health.⁷¹ Although experts cannot predict the origin of the next outbreak, it will most likely emerge from within the population of a poor, developing country that lacks access to clean water, adequate nourishment, and basic medical treatment. The public health crisis would certainly destabilize such a state, and possibly the region; and it is altogether likely that the infection will spread to other populations, including the United States. The severe economic and political consequences following a pandemic threaten to change the global balance of power entirely:

⁶⁵ For a full accounting, see the Intergovernmental Panel on Climate Change, <http://www.ipcc.ch/>

⁶⁶ United Nations Development Programme, *Human Development Report 2007/2008: Fighting Climate Change: Human Solidarity in a Divided World*, (New York, NY: United Nations, 2007), <http://hdr.undp.org/en/reports/global/hdr2007-2008/>

⁶⁷ See Campbell, et al, *The Age of Consequences: The Foreign Policy and National Security Implications of Climate Change* (Washington, DC: CSIS and CNAS, 2007): 42,

http://www.cnas.org/attachments/contentmanagers/1278/CSIS-CNAS_AgeofConsequences_October07.pdf

⁶⁸ Sara Goudarzi, “Flocking to the Coast: World’s Population Migrating to Danger,” *Live Science*, July 18, 2006, http://www.livescience.com/environment/060718_map_settle.html.

⁶⁹ See Campbell, et al: 7.

⁷⁰ See the World Health Organization Data table: http://www.who.int/whr/2004/annex/topic/en/annex_2_en.pdf

⁷¹ Michael Osterholm, “Preparing for the Next Pandemic,” *Foreign Affairs* 84, no.4 (July/August 2005): 26.

“Independence, not interdependence, would become the coin of the realm, and dangerous patterns of interstate behavior might emerge that resemble those prevalent before World War II.”⁷²

Medical professionals warn of a future avian influenza pandemic “unlike any ever witnessed.”⁷³ The marked increase in the volume and speed of international travel means that infectious diseases can spread across the globe faster than in the past. The 2002 outbreak of severe acute respiratory syndrome (SARS) in China is illustrative of this point. The disease was spread to 5 countries within 24 hours, eventually reaching 30 countries.⁷⁴ As of January 2007, 265 people in Southeast Asia have contracted the disease and 159 have died—a 60 percent mortality rate, which the World Health Organization predicts could be maintained during a pandemic if the virus acquires full human-to-human transmissibility.⁷⁵

In many countries, HIV/AIDS has transcended a public health crisis to become an issue of national security. Such epidemics exacerbate other security issues—especially for developing countries, which have less capability to deal with each crisis as it arises. HIV/AIDS is the leading cause of death in many sub-Saharan African states, where the epidemic has significantly reduced the readiness of state security forces and affected states’ governing capacities. According to the National Intelligence Council, the hardest-hit countries (those where 20 percent of the population is affected) have already experienced a 1 percent annual decline in GDP.⁷⁶ In Africa HIV/AIDS attacks civil servants at a higher rate, causing a breakdown in governance at all levels.⁷⁷

War and conflict have been major contributors to the spread of HIV/AIDS. During times of conflict, troop movements increase, as do populations of refugees and internally displaced persons, creating ideal conditions for the rapid spread of all infectious diseases.⁷⁸ One-third of the UN’s peacekeepers are deployed in African countries with high infection rates. The potential for these peacekeepers to carry infectious diseases back to their native countries is so high that in the future nations may refuse to deploy troops to high-risk countries, a refusal that could have serious implications for African security.⁷⁹

Threats to stability and security posed by HIV/AIDS are for now largely limited to parts of Africa and Southeast Asia. However, current HIV/AIDS infection rates in Russia and China suggest that these states are experiencing the early stages of HIV/AIDS epidemics. The number of fatalities in this region will far exceed those of Africa, and the global economic and military balance may change as a result.⁸⁰

⁷² G. John Ikenberry and Anne-Marie Slaughter, *Forging a World of Liberty Under Law: U.S. National Security in the 21st Century: Final Report of the Princeton Project on National Security* (Woodrow Wilson School of Public and International Affairs, Princeton University, 2006): 51.

⁷³ Laurie Garrett, “The Next Pandemic?” *Foreign Affairs* 84, no. 4 (July/August 2005), 4.

⁷⁴ Ikenberry and Slaughter, *Princeton Project on National Security*, 52.

⁷⁵ Garrett, “The Next Pandemic?” 11.

⁷⁶ International Crisis Group Report, *HIV/AIDS as a Security Issue*, (Brussels: International Crisis Group, 2001): 9.

⁷⁷ *Ibid.*, 15.

⁷⁸ Instances of rape and prostitution are more frequent among these vulnerable civilian populations. Statistics show that women are six times more likely to contract HIV in a refugee population than in the general populace. Robyn Pharaoh and Martin Schonteich, *AIDS, Security and Governance in Southern Africa: Exploring the Impact*, Institute for Security Studies (January 2003), 5–6.

⁷⁹ *Ibid.*, 22–24.

⁸⁰ Nicholas Eberstadt, “The Future of AIDS,” *Foreign Affairs* 81, no. 6 (November/December 2002): 22–45.

The infectious disease expert Laurie Garrett writes that in the event of a “superflu,” the international community would look to the United States, Europe, Japan, and Canada for assistance; and “how these wealthy governments responded, and how radically the death rates differed along world fault lines of poverty, would resonate for years thereafter.” The required resources are so scarce that should a global outbreak occur, “it is doubtful that any of the world’s wealthy nations would be able to meet the needs of their own citizenry—much less those of other countries.”⁸¹ Currently, only 350 million influenza vaccine doses are produced worldwide, and 85 percent of these are concentrated in nine countries.⁸² Thus, countries faced with an influenza pandemic are unlikely to share treatments, leaving more than 6 billion people unvaccinated throughout the developing world, with at least a third of them becoming infected.⁸³ The international political system would be starkly altered. Trust between nations could be “obliterated” if there were a vaccination embargo.⁸⁴ Security concerns would heighten in the aftermath of a pandemic. The impact of a pandemic influenza on military operations abroad is impossible to calculate, but would likely be disastrous. Since many countries would be unable to access vaccines, their troops would be devastated by influenza—especially in sub-Saharan Africa, where troops are already immunocompromised by the high prevalence of HIV/AIDS. The destabilizing effect of this loss of security throughout the developing world would only compound the social disruption of a pandemic.

The global economy would also be seriously affected, and could collapse altogether if governments closed borders, halting international travel and trade. A Lowy Institute study finds that a mild pandemic would cost the world 0.8 percent of GDP, or \$330 billion, in lost economic output, while a severe pandemic would cost global GDP \$4.4 trillion or 12.6 percent.⁸⁵ The Center for Disease Control estimates that in the United States, direct medical costs alone of a medium-level epidemic would total more than \$166 billion.⁸⁶ Though these are only best guesses, the economic consequences would most definitely be severe and disparate, with the economies of developing countries suffering the most harm.

Energy Security

The United States faces a multidimensional energy security threat: increasing domestic and global energy demand, decreasing and unstable supply, competition from consumer-nations seeking to maximize leverage over supply sources, the use of oil as a weapon by adversarial producer-nations, and non-state actors targeting attacks on the global energy infrastructure. Political crises in volatile supply regions will only intensify these concerns. The implications of domestic or regional conflicts in Russia, the Middle East, and South America could resonate throughout the global economy.⁸⁷

Energy security, a top priority for all states, is playing an increasing role in international politics. Secretary of State Condoleezza Rice has already warned that energy politics are “warping diplomacy

⁸¹ Garrett, “The Next Pandemic?” 5.

⁸² Today only nine countries—the United States, United Kingdom, Canada, Switzerland, France, Germany, Italy, the Netherlands, and Australia—produce 85 percent of the world’s vaccines. See Maryn McKenna, “The Pandemic Vaccine Puzzle Part 2: Vaccine Production Capacity Falls Far Short,” *CIDRAP News*, October 26, 2007, <http://www.cidrap.umn.edu/apic/influenza/panflu/news/oct2607panvax2.html>.

⁸³ *Ibid.*

⁸⁴ Ikenberry and Slaughter, *Princeton Project on National Security*, 51.

⁸⁵ Warwick McKibbin, *Global Macroeconomic Consequences of Pandemic Influenza*, Lowy Institute for International Policy, (February 2006), 26. <http://www.brookings.edu/views/papers/mckibbin/200602.pdf>.

⁸⁶ Garrett, “The Next Pandemic?” 4.

⁸⁷ Carlos Pascual, *The Geopolitics of Energy: From Security to Survival*, Brookings, (January 2008): 4, http://www.brookings.edu/papers/2008/01_energy_pascual.aspx.

around the world.”⁸⁸ As the world’s largest energy consumer, the United States is both burdened and empowered in confronting energy security. On the one hand, U.S. energy policy can have a profound effect on the behavior of global markets, giving the nation ample opportunities to shape trends and spearhead efforts to develop renewable energy resources. On the other hand, foreign supply dependency seems to limit creativity and constrains foreign policy and national security objectives. International security expert Stewart Patrick observes,

[M]any of the world’s main oil exporters, including Iraq, Nigeria, Russia, Saudi Arabia, and Venezuela, are less stable today than in 2000. . . . Complicating matters, a large percentage of the world’s oil and gas transits unstable regions, such as Transcaucasia, and vulnerable choke points, such as the Straits of Hormuz and Malacca, via pipeline or tanker.⁸⁹

Among the primary missions of the U.S. military is its assurance of global access to oil.⁹⁰ Though U.S. military presence preceded it, the Carter Doctrine codified the U.S. military commitment as the guarantor of the secure export of Middle East security.⁹¹ However, this military and diplomatic commitment includes other regions of the world, particularly in the Caspian Sea Basin, Africa, and South America.⁹² Since its inception in 1980, the Carter Doctrine has been invoked by President Ronald Reagan to protect Kuwait and oil tankers transiting the Gulf during the Iran-Iraq War, and was again cited by President George H. W. Bush during the first Gulf War. Today, the Navy’s Fifth Fleet based out of Bahrain is almost entirely devoted to patrolling tanker lanes.⁹³ The scattered refineries, miles of pipelines, and shipping routes through which foreign oil and gas pass to the United States require enormous commitment of resources to protect. The real price of oil, when calculated to include Department of Defense (DoD) expenditures to safeguard global oil flows, is around \$150 per barrel to the American consumer (assuming a market price of about \$90 per barrel).⁹⁴

As a recent Brookings Institution study on U.S. energy policy concludes, fossil fuels are the “life blood of the U.S. economy.”⁹⁵ The United States accounts for 25 percent of global energy consumption.

⁸⁸ Senate Foreign Relations Committee, U.S.-India Atomic Energy Cooperation: The Indian Separation Plan and the Administration’s Legislative Proposal: Hearing before Committee on Foreign Relations, 109th Cong., 2nd sess., 2006, <http://foreign.senate.gov/hearings/2006/hr060405a.html>, (Statement by Secretary of State Condoleezza Rice).

⁸⁹ Stewart Patrick, “Weak States and Global Threats: Fact or Fiction?” *Washington Quarterly* 29, no. 2 (Spring 2006): 43. Shipping routes that have the potential to close are called chokepoints. These are, in descending volume of shipping throughput: the Strait of Hormuz, Strait of Malacca, Bab el-Mandeb, Suez Canal and Sumed Pipeline, Bosphorus/Turkish Straits, Russian oil and gas export pipelines/ports, Panama Canal and the Trans-Panama pipeline. See the USC Sequence Stratigraphy, “World Petroleum Reserves and Consumption,” at <http://strata.geol.sc.edu/petroleum-reserves-consum.html>.

⁹⁰ Michael Klare, “Oil Wars,” *Mother Jones*, October 10, 2004, http://www.motherjones.com/news/dailymojo/2004/10/10_504.html.

⁹¹ Proclaimed by President Jimmy Carter in his State of the Union address in Washington, D.C. on January 23, 1980. After declaring that the movement of Soviet forces into Afghanistan was a grave threat to world oil supply, Carter said, “Let our position be absolutely clear: An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force.” See <http://www.jimmycarterlibrary.org/documents/speeches/su80jec.phtml>.

⁹² Klare, “Oil Wars.”

⁹³ *Ibid.*

⁹⁴ Ikenberry and Slaughter, *Princeton Project on National Security*, 51.

⁹⁵ Gregory J. Lengyel, *Department of Defense Energy Strategy: Teaching an Old Dog New Tricks*, Brookings Institution, (2007): 7, <https://research.maxwell.af.mil/papers/ay2007/affellows/Lengyel.pdf>.

In 2006, DoD used 12.6 million gallons daily—93 percent of the U.S. government’s overall energy consumption—making it the single largest consumer in the world.⁹⁶ U.S. Joint Forces Command Commander General James Mattis has argued that the military must be “unleash[ed] . . . from the tether of fuel.”⁹⁷ Though the Defense Science Board’s February 2008 Task Force “finds it difficult to imagine a scenario where DoD would be unable to obtain the petroleum it needs to perform its mission from commercial sources,” the rising price of oil is still a serious consideration for future operations.⁹⁸ From 2004 to 2006, DoD fuel expenditures rose from \$5.9 to \$13.6 billion, mostly owing to the rising price of petroleum products; and according to the Defense Science Board, “[I]ncreases of this magnitude mean that large sums of money must be re-programmed in order to meet operating costs, wreaking havoc on programs from which the funds are taken.”⁹⁹ Rising costs of fuel and associated deliveries have siphoned funds from combat capability investments and left deployed forces vulnerable to disruptions in supply.¹⁰⁰ Projected hikes in fuel prices will put further pressure on DoD’s already strained budget.

Since the global economy is tied to the security of oil-producing countries like Iraq, the need for a Western military presence to ensure access to oil in the Middle East will grow, possibly exacerbating anti-American sentiments already high in the region. The continued U.S. presence, however, seems unavoidable. Iraq possesses at least 11 percent of the world’s proven oil reserves (and perhaps far more yet to be discovered), and allowing the state to fail would send shock waves through the global trading system.¹⁰¹ Even relatively minor threats to supply sources can have enormous consequences for energy markets. Tensions between Turkey and Iraq over terrorist attacks into Turkey from safe havens in northern Iraq in October 2007 led to an 8 percent increase in the international price per barrel.¹⁰²

Energy Security: Rising Demand and Insufficient Supply

As the global economy becomes increasingly integrated, the United States will face rising competition over finite resources from rapidly growing economies in the developing world. According to the Department of Energy and the Energy Information Agency, by 2030 global consumption will increase almost 50 percent over 2003 levels.¹⁰³ Experts project that demand for energy in developing countries will collectively exceed that of the developed world by 2015,¹⁰⁴ and it is not clear that global supply can meet increased demand in a market that is already tight. Although new reserves are discovered each year, it is a cause of concern that at the current rate of consumption, the world’s known conventional reserves will run out by 2050.¹⁰⁵

⁹⁶ Ibid., 10.

⁹⁷ Ibid., 14.

⁹⁸ Final Report of the Defense Science Board, *Taskforce on DOD Energy Strategy*, U.S. Department of Defense (2008): 12, <http://www.acq.osd.mil/dsb/reports/2008-02-ESTF.pdf>.

⁹⁹ Ibid., 13.

¹⁰⁰ Lengyel, *Teaching an Old Dog*, 22.

¹⁰¹ Anthony Cordesman, *The Tenuous Case for Strategic Patience* (Washington, DC: CSIS, 2007), http://www.csis.org/media/csis/pubs/080607_iraq-strategicpatience.pdf

¹⁰² Pascual, *Geopolitics of Energy*, 2.

¹⁰³ Lengyel, *Teaching an Old Dog*, 15.

¹⁰⁴ Frank Verrastro and Sarah Ladislaw, “Providing Energy Security in an Interdependent World,” *Washington Quarterly* 30, no. 4, (Autumn 2007): 96.

¹⁰⁵“ USC Sequence Stratigraphy - World Petroleum Reserves and Consumption,” <http://strata.geol.sc.edu/petroleum-reserves-consum.html>.

The United States' main competitors for finite hydrocarbon energy supplies may be China and India. China is already the world's second-largest oil consumer and its appetite is expanding rapidly—it is expected to surpass the United States as the largest oil consumer soon after 2010.¹⁰⁶ China's quest for oil has significantly increased its diplomatic outreach. Thirty percent of Chinese oil imports came from Africa in 2005,¹⁰⁷ as China has attempted to lock up the African market with strategies that have distorted the global market and disrupted regional politics.¹⁰⁸ China has purchased large stakes in future oil production in Nigeria, Sudan, Angola, the Republic of Congo, Chad, Equatorial Guinea, and Gabon in return for development and reconstruction aid, as well as the sale of military hardware. China's willingness to sell arms to African countries has gained it political favors in the United Nations' General Assembly and lowered the costs of its oil purchases.¹⁰⁹ Although using aid to influence material concessions from resource-rich developing countries is not a new tactic (the West and Russia used this approach for decades), there is concern that China's pursuit of these relations is clearly undertaken at the expense of regional stability and the long-term economic development of client countries.

The global balance of power will continue to change as oil producers gain more political and economic leverage with rising demand. It is unlikely that global production capacity can expand fast enough to meet that demand. Many countries, already producing at or around peak capacity, are not investing in long-term solutions to increase their downstream production.¹¹⁰ According to the 2007 *World Energy Outlook*, "Some \$22 trillion of investment in supply infrastructure is needed to meet projected global demand [for primary energy resources out to 2030]."¹¹¹ When prices rise, resource-rich states take over the production of energy and gas reserves through national oil companies, which are less responsive to world trends and more inefficient than private companies.¹¹² Most Organization of Petroleum Exporting Countries (OPEC) members set production quotas as a cartel, while non-OPEC states like Canada—the leading exporter of oil to the United States—pump at maximum capacity and will exhaust their resources more quickly. This trend suggests that in the future the world will be more—not less—dependent on oil from conflict-prone regions of the developing world. The Middle East has more than 60 percent of the world's proven conventional oil reserves and some 40 percent of its gas reserves.¹¹³ Moreover, Persian Gulf countries maintain a majority of the global excess supply, and according to the U.S. Geological Survey more than 50 percent of undiscovered oil reserves and 30 percent of gas are in Saudi Arabia, Iran, Iraq, Kuwait, the United Arab Emirates, and Libya.¹¹⁴ The chief economist of the International Energy Agency (IEA) observes, "We are ending up with 95 percent of the world relying for its economic well being on decisions being made by five or six countries in the Middle East."¹¹⁵

¹⁰⁶ World Resources Institute, "December 2008 Monthly Update: China's Future in an Energy-Constrained World," <http://earthtrends.wri.org/updates/node/274>.

¹⁰⁷ Cindy Hurst, *China in Africa*, Institute for the Analysis of Global Security (July 2006), <http://www.iags.org/chinainafrica.pdf>.

¹⁰⁸ John Deutch and James Schlesinger, *National Security Consequences of U.S. Oil Dependency: report of an Independent Task Force*, Council on Foreign Relations (2006): 6.

¹⁰⁹ Esther Pan, "China, Africa and Oil," Council on Foreign Relations (January 2007), <http://www.cfr.org/publication/9557/>.

¹¹⁰ Pascual, *Geopolitics of Energy*, 4.

¹¹¹ *World Energy Outlook*, OECD/IEA (2007): 42.

¹¹² Deutch and Schlesinger, *National Security Consequences*, 19.

¹¹³ Cordesman, "The Tenuous Case For Strategic Patience."

¹¹⁴ Lengyel, *Teaching an Old Dog*, 16.

¹¹⁵ Quoted in Gal Luft, *Dependence on Middle East Energy and its Impact on Global Security*, Institute for the Analysis of Global Security, 2; http://www.iags.org/luft_dependence_on_middle_east_energy.pdf.

As more states seek to address their energy security concerns, proliferation threats will grow.¹¹⁶ Recent evidence suggests that more states will attempt to gain a civilian nuclear capability, and the international community will have a more difficult time deterring this pursuit. Many of the new nuclear powers, in fact, may be perhaps not the largest oil-producing states but their neighbors. This development would complicate any supply-assurance military measures that may be undertaken in accord with the Carter Doctrine.

Energy Security: Petroleum Exporters

As known conventional oil reserves are tapped at peak production, more of the world's supply will come from unstable developing countries more hostile to U.S. interests than are non-OPEC countries such as Canada or Norway. Dependency on autocratic and repressive oil exporters constrains U.S. ability to pressure undemocratic regimes to reform, thereby undermining key U.S. foreign policy goals tied to promoting democracy and the rule of law.¹¹⁷ Petrodollars rarely trickle down to the majority of the population in oil-producing countries; indeed, they most often reinforce corruption at the elite level. Oil-rich states suffer from the “resource curse,” as unrepresentative regimes maintain power by buying off the public through tax exemptions (as in Saudi Arabia) or the provision of free energy and electricity (as in Turkmenistan), among other unsustainable state practices. An economic monoculture keeps a state from investing in social reform or developing other sectors of the economy. In authoritarian countries dependent on petrodollars, “the price of oil and the pace of freedom always move in opposite directions.”¹¹⁸ These governments suffer from a legitimacy deficit, and often have large populations of latent dissenters.

Russia controls 25 percent of the world's natural gas reserves and has extensive domestic petroleum reserves.¹¹⁹ Russia's state-owned oil giant Gazprom provides 30 percent of European oil imports and 50 percent of Europe's natural gas.¹²⁰ Since no geographically viable alternative to Russian fuel exists, this relationship will only become more important, giving Russia substantial leverage over European affairs. Supply has been halted numerous times during disputes between Russian and Eastern European states, exposing the European Union's strategic vulnerability. Projects are under way in many European countries to develop pipelines that will deepen Europe's reliance on Russian energy. Russia has also sought to control the natural gas and oil reserves of the former Soviet republics and has blocked the construction of pipelines from Central Asia to Europe that avoid Russian territory.

Russia enjoys a large degree of immunity from international pressure as a result of its tremendous resource wealth and strategic capabilities—a status that Russia has flaunted while opposing the United States and its allies within the UN and other international forums on numerous issues. For instance, Russia has opposed many of the more stringent measures against Iran, and has contributed to Iran's nuclear energy program.¹²¹ Russia and China are major obstacles to implementing effective international

¹¹⁶ Please see the “Mitigate Proliferation Threats” chapter in this appendix.

¹¹⁷ See also discussion of this issue in the appendix section “Maintain Global and Regional Stability.”

¹¹⁸ Gal Luft, *Dependence on Middle East Energy*, 4.

¹¹⁹ The exact amount of Russian petroleum reserves are unknown, and many doubt official figures.

¹²⁰ Zeyno Baran, “EU Energy Security: Time to End Russian Leverage,” *The Washington Quarterly* 30, no. 4 (Autumn 2007): 132.

¹²¹ Pascual, *Geopolitics of Energy*, 9.

measures against Iran; and U.S. and European energy dependence leave Western powers poorly positioned to alter this dynamic.¹²²

In addition to having destabilizing effects on the international system, the unequal distribution of resources within countries is also a cause of growing internal instability. Nigeria, currently the fifth-largest petroleum exporter to the United States, is a case in point. Work is under way to secure facilities that could “in the future account for 25 percent of U.S. imports.”¹²³ Events in Nigeria’s oil-rich Niger Delta region have contributed to the rising price of oil on the global market. Various militant groups operate there, killing and kidnapping foreign oil workers, including Americans, and vandalizing infrastructure.¹²⁴ According to Nigeria’s oil minister, militant violence has reduced production by almost 600,000 barrels per day (bbl/d).¹²⁵ In 2005, Nigeria exported 2.5 million bbl/d, but today it exports less than 2.1 million bbl/d. This drop demonstrates the Nigerian state’s inability to secure its most valuable infrastructure, as well as the heightened U.S. exposure to the interruption of energy supplies.¹²⁶

Though the complexities created by energy importation make it attractive, “energy independence” is an unrealistic goal, and proponents pay little attention to the huge technical and logistical hurdles that must be overcome to realize it.¹²⁷ No one country in the world is entirely energy independent. In fact, many experts agree that “self-reliance does not always guarantee greater energy security.”¹²⁸ Energy security is not a zero-sum game. Upsets to global supply are far more destabilizing to developing countries that lack the emergency relief mechanisms of the United States, and are likely compound the other problems that weak states face. The global nature of the oil market, drawing the commodity from locations across the world, provides a cushion in times of supply disruption that self-sufficiency could not. For example, in the oil crisis of the 1970s the United States found an alternative supply after only a temporary interruption.¹²⁹ Moreover, self-sufficiency could result in the United States’ losing diplomatic leverage (as the world’s largest consumer), especially if allies’ dependence, such as Europe’s on Russia, continues unchanged. Mutual dependence also offers an opportunity to increase cooperation among consumers and producers, and can be tied to development aid.

Energy Security: Developing World Energy Needs and Realities

The pain caused by record oil prices is greater in developing countries, as they give rise to a host of economic woes that compound health, environmental, and governance issues. Wealthy non-oil-producing

¹²² Though the U.S. imports nothing from Iran, the country is the fourth largest exporter of petroleum. Rising costs of oil have bankrolled Iran’s nuclear program, since half of the government’s budget is derived from its oil revenues, projected to rise to \$60 billion in 2008.

Gal Luft, “Iran’s Oil Industry: A House of Cards?” Institute for the Analysis of Global Security, <http://www.iags.org/n050707.htm>.

¹²³ Klare, “Oil Wars.” Also see the EIA’s Total Petroleum Imports Top 15 Countries:

http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/company_level_imports/current/import.html.

¹²⁴ Though it is largely believed that these militants only seek ransom payments, the umbrella organization that claims to speak for the collective groups, MEND (Movement for the Emancipation of the Niger Delta) claims that the attacks are motivated by the poverty of the Niger Delta states. Despite their massive oil reserves, states in the Niger Delta region are the poorest and least developed in the country (Pan, “China, Africa and Oil”).

¹²⁵ Rebels have recently bombed a tanker and three pipelines. See Michele Markey, “Update on Nigeria,” *Apache Corp.*, http://www.apachecorp.com/explore/explore_features/browse_archives/View_Article/?docdoc=689.

¹²⁶ Patrick, “Weak States and Global Threats,” 43.

¹²⁷ Pascual, *Geopolitics of Energy*, 15.

¹²⁸ Verrastro and Ladislav, “Providing Energy Security,” 98.

¹²⁹ Patrick, “Weak States and Global Threats,” 42.

countries spend 2 percent of their GDP on oil imports, while poor African nations spend up to 10 percent of their GDP.¹³⁰ Although energy intensity, or energy consumption per unit of GDP, has been improving throughout developing countries, it remains far higher than in advanced economies, reflecting “the inefficient production of power and inefficiencies in the utilization of power.”¹³¹ Fixing these problems will require capital investments far exceeding the capacity of the countries in question. The Atlantic Council writes in a report on energy in the developing world:

The IEA estimates that roughly \$8 trillion dollars of investments will be needed in the developing countries to meet energy needs through 2025. This would still leave about 2 billion people without access to electricity. Closing this gap would require a further \$2 trillion.¹³²

In 2002, 1.6 billion people lacked access to electricity, and over the next two decades few have prospects for improving that situation, which exacerbates poverty.¹³³ Achieving energy security is necessary to support economic development and to improve quality of life, especially in rural regions of the developing world. According to the 2002 *World Energy Outlook*, “lack of electricity and heavy reliance on traditional biomass are hallmarks of poverty in developing countries.”¹³⁴ Biomass fuels such as agricultural residue, wood, and manure are essential to the economic activity and welfare of households in poor countries. In Africa, biomass fuels meet 90 percent of household energy needs.¹³⁵ Globally, more than 2.5 billion people rely on noncommercial biomass fuels for cooking and heating. The IEA predicts that this number will increase because the cost of oil is rising. Daniel Kannen writes:

For these people, biomass is generally used in open hearths or simple stoves that are inefficient and polluting, with significant impacts on human health. Combustion of biofuels emits pollutants that currently cause more than 1.6 million deaths globally each year (400,000 in Sub-Saharan Africa alone), mostly among children and women.¹³⁶

These practices are environmentally damaging and inefficient. They contribute to cycles of poverty and lack of development.

Governance and Human Rights

The promotion of human rights across international lines began in earnest with the adoption of the UN Universal Declaration of Human Rights in 1948. But for the United States, it was not until the Carter administration that human rights were enshrined as a strategic national security objective. As President Jimmy Carter stated in his famous 1977 address on the role of human rights in U.S. policy,

¹³⁰ “The Oil Catastrophe Continues, High Prices Hit Poor Countries Hardest,” Sooknet, <http://www.sooknet.com/technology/news.cfm?ID=56960>.

¹³¹ Richard Lawson, John Lyman and Donald Guertin, “A Marshall Plan for Energy and Water Supply in Developing Countries,” Atlantic Council of the U.S. (March 2005): 6.

¹³² Ibid.

¹³³ *World Energy Outlook*, OECD/IEA (2002), 365.

¹³⁴ Ibid.

¹³⁵ Daniel M. Kannen, “Bioenergy and Agriculture: Promises and Challenges; Bioenergy in Developing Countries: Experiences and Prospects” International Food Policy Research Institute, Focus 14, Brief 10 of 12, (December 2006). http://www.ifpri.org/2020/focus/focus14/focus14_10.pdf.

¹³⁶ Ibid.

The world is still divided by ideological disputes, dominated by regional conflicts, and threatened by the danger that we will not resolve the differences of race and wealth without violence or without drawing into combat the major military powers. We can no longer separate the traditional issues of war and peace from the new global questions of justice, equity, and human rights.¹³⁷

Carter's human rights objectives were more successful rhetorically than in practice. Although Carter's idealism reflects one enduring strain in American politics, the tendency toward self-interested realpolitik is just as strong. William W. Burke-White observes,

For most of the past fifty years, U.S. foreign policymakers have largely viewed the promotion of human rights and the protection of national security as in inherent tension. Almost without exception, each administration has treated the two goals as mutually exclusive: promote human rights at the expense of national security or protect national security while overlooking international human rights.¹³⁸

Yet Burke-White goes on to argue that the data clearly shows there is benefit in encouraging other states to respect human rights among their own populations. He concludes: (1) states that abuse human rights are likely to engage in international acts of aggression; (2) states with average or decent human rights practices at home are less likely to engage in international aggression; and (3) states that respect human rights will engage in international interventions, motivated at least in part by the desire to protect the human rights of other citizens under duress in another state. Upholding domestic human rights appears to create a virtuous circle that promotes global human rights, peace, and stability.

The future protection of vital freedoms and human rights depends largely on the capacity of states to adapt amid the forces of globalization and the spread of new technologies that challenge the institutions responsible for providing security and other public goods. As more pressure is applied to states by non-state actors and other new elements in an interconnected world of increased individual power, the natural proclivity of states may be to clamp down and rescind citizens' rights and freedoms previously granted. The challenge facing 21st-century policymakers is to identify states with specific indicators of instability and then set priorities that not only address looming crises but also confront the root causes of instability and conflict that threaten vital freedoms. This process might begin with a closer examination of nondemocratic forces and weak states and their complex and interrelated causal relationships to civil war, the displacement of populations, transnational threats, and internal and regional instability.

The human rights community has increasingly turned to a state-centric view, noting that the best way to preserve the basic rights of the individual is through a state that can protect and uphold those rights. In a highly debated *New York Times* op-ed published in February 2002, the scholar Michael Ignatieff asked if the human rights era might be at its end in an age in which countering terrorism was an overriding, existential prerogative.¹³⁹ He reasoned that in fact there could be similarity and synthesis between human rights goals and counterterrorism objectives—if a longer view of progress were taken, centered on strengthening states. He argued, “The human rights movement is not in the business of

¹³⁷ President Jimmy Carter, “Human Rights and Foreign Policy” (commencement speech given at Notre Dame University, South Bend, IN, June 1977).

¹³⁸ William W. Burke-White, “Human Rights and National Security: The Strategic Correlation,” *Harvard Human Rights Journal* 17 (Spring 2004), <http://www.law.harvard.edu/students/orgs/hrj/iss17/burke-white.shtml#fn1>.

¹³⁹ Michael Ignatieff, “Is the Human Rights Era Ending?” op-ed, *New York Times*, February 5, 2002,

preserving American power. But it should be concerned about stability, about moving strategically vital states like Egypt and Saudi Arabia from closed to open societies without delivering them up to religious fundamentalists.”¹⁴⁰ The outcome of the Palestinian parliamentary elections in January 2006 validated Ignatieff’s fear. The radical Islamist party Hamas swept to victory in democratic elections, further heightening tensions with Israel and isolating Palestinians in Gaza from the international community.

In the 20th century, democracy greatly reduced the risk of conflict, as democratic states preferred negotiation to conflict when resolving disagreements.¹⁴¹ Not only does democracy’s emphasis on the rule of law provide avenues for conflict resolution, but it also is the basis for upholding human rights. Should the advance of democracy be slowed or reversed, then global instability is likely to increase, as the vital freedoms of individuals and communities are threatened.

The history of democracy, as described by the political scientist Samuel P. Huntington, has not been a steady march but rather a series of waves, with each wave advancing and receding in turn.¹⁴² By the end of the 20th century, successive waves had brought democracy to 60 percent of the world’s independent states.¹⁴³ The forces of global integration and economic growth played a vital role in this progress, yet forces of political and religious violence, externally manipulated societal divisions, and authoritarian regimes have turned the tide and reversed hard-won gains. According to Freedom House’s annual survey, *Freedom in the World 2008*, “results for 2007 marked the second consecutive year in which the survey registered a decline in freedom, representing the first two-year setback in the past 15 years. In all, nearly four times as many countries showed significant declines during the year as registered improvements.”¹⁴⁴ A number of harmful trends are driving the overall downward trajectory. These include the negative influence of powerful autocracies on small, less powerful regional countries; new and unstable democracies plagued by regional and transnational problems associated with violent crime such as narcotics trade, organized criminal networks, corrupt institutions, and vigilantism; and civil conflict in South Asia, the Middle East, and Africa.

Globalization will continue to be a catalyst for the spread of democracy, as further economic liberalization increases access to information and to ideas associated with political liberty. Yet as the current trend of democratic reversals demonstrates, other factors can limit the impact and reach of globalization’s benefits.

Human Rights and Governance: 21st-Century Authoritarianism

The 21st century has seen an emergence of alternative models of governance, with Russia and China each developing autocratic alternatives to democracy that are variants on their political systems of the 20th century. These models seek to deny citizens basic political rights and reduce accountability, while the regimes pursue a capitalist course guided by heavy state involvement in economic policy. In large part, power is maintained by routinely suppressing democratic opposition, civil society, and independent media.

¹⁴⁰ Ibid.

¹⁴¹ Jack Snyder, *From Voting to Violence: Democratization and Nationalist Conflict* (New York: Norton, 2000).

¹⁴² See Samuel Huntington, *The Third Wave: Democratization in the Late Twentieth Century*, new ed. (Norman: University of Oklahoma Press, 1993).

¹⁴³ Larry Diamond, “The Democratic Rollback,” *Foreign Affairs* 87, no. 2 (March/April 2008): 36.

¹⁴⁴ Arch Puddington, “Freedom in Retreat: Is the Tide Turning?,” in *Freedom in the World 2008*, Freedom House (2008), <http://www.freedomhouse.org/uploads/fiw08launch/FIW08Overview.pdf>.

In China, the project is called “socialism with Chinese characteristics”; in Russia, this paradigm of governance has been labeled “sovereign democracy,” with little emphasis on the latter.¹⁴⁵ Largely because of the economic shocks of the 1990s, which in memory became a shameful time of national humiliation, Russians have become acutely sensitive to foreign influences; they have gravitated toward nationalistic politics that seek not only to strengthen the homeland but also to reassert its influence in the region. In resuming its nationalist posture, Russia threatens to destabilize the states of the former Soviet Union and other countries once thought of as the “third wave” of democratization.¹⁴⁶ Its current path is best described by former National Security Advisor Zbigniew Brzezinski: “[President Vladimir] Putin’s eight years were a regression toward capricious and repressive politics, but they could have been at least a modest progression toward a constitutional system of rule. The turn toward political authoritarianism in Russia was a choice, not a necessity.”¹⁴⁷

In the near and medium terms, strong economic growth in both Russia and China keep the regimes stable.¹⁴⁸ Absent such growth, there is little reason to believe that these antidemocratic models would work; nevertheless, their success may tempt smaller, less powerful countries—both soft authoritarian regimes that seek to consolidate power and weak democracies looking for a path to economic empowerment—to imitate them, with ruinous results.

Regionally, the influence of powerful authoritarian regimes is clearly a threat to stability. Russia provides political support to a number of repressive autocratic regimes in the Caucasus region, while putting pressure on the new democratic governments in Estonia, Ukraine, and Georgia. In the same vein, Iran and Syria have sought to gain regional power by supporting antidemocratic forces in Lebanon, Iraq, and the Palestinian Territories.¹⁴⁹ China is actively exerting its influence not only on autocratic regimes in its region (North Korea, Burma) but also, increasingly, on the resource-rich countries of Africa.¹⁵⁰ China’s stated policy of “noninterference in domestic affairs” when making its decisions about investment has enabled its continued involvement with the regimes of Sudan and Zimbabwe, among other weak states that are in the throes of severe human rights crises, that threaten regional stability, and that have the potential to export transnational threats (terrorism, crime, weapons, etc.).

According to the human rights group Amnesty International, both Russia and China have violated an UN-mandated embargo on the shipment of arms to Sudan, providing weapons that are being used against communities in the Darfur region.¹⁵¹ China, for example, has sold the Darfur government

¹⁴⁵ Andrew C. Kuchins, “Human Rights, Civil Society, and Democratic Governance in Russia: Current Situation and Prospects for the Future,” Testimony Prepared for U.S. Commission on Security and Cooperation in Europe, February 2006.

¹⁴⁶ See Huntington, *The Third Wave*.

¹⁴⁷ Zbigniew Brzezinski, “Putin’s Choice,” *The Washington Quarterly* 31, no. 2 (Spring 2008): 105.

¹⁴⁸ Christopher Walker and Sanja Kelly, “Ruling by Law: Ambitions and Limits of the 21st Century Authoritarian Model,” in *Countries at the Crossroads 2007: A Survey of Democratic Governance* (Freedom House 2007), 3, <http://www.freedomhouse.org/template.cfm?page=140&edition=8&ccrpage=42>.

¹⁴⁹ Arch Puddington, “Freedom in Retreat: Is the Tide Turning?,” in *Freedom in the World 2008* (Freedom House, 2008), 2. <http://www.freedomhouse.org/uploads/fiw08launch/FIW08Overview.pdf>.

¹⁵⁰ Esther Pan, “China, Africa and Oil,” Council on Foreign Relations, <http://www.cfr.org/publication/9557/>.

¹⁵¹ Amnesty International, “Sudan: Arms Continuing to Fuel Serious Human Rights Violations in Darfur,” May 8, 2007.

weapons and \$100 million worth of Shenyang fighter planes.¹⁵² As authoritarian regimes continue to press undemocratic models of governance on states within their sphere of influence, vital freedoms will continue to be at risk.

Human Rights and Governance: State Weakness, Failure, and Absence

The United States' 2002 National Security Strategy proclaims, "The United States today is threatened less by conquering states than we are by weak and failing ones."¹⁵³ This dramatic shift in perspective, forced by the 9/11 attacks, dominates the 21st-century security environment, as great powers are increasingly vulnerable to threats emanating from the world's most poorly governed countries. Countries that fail to integrate into the global economic system are most often plagued by poor governance and conflict. These "weak states" are characterized by a distinct set of problems associated with their inability or unwillingness to provide law, order, and vital freedoms equally to all segments of the population, making them vulnerable to social deterioration, rebellion, and violent conflict.¹⁵⁴ In addition, their isolation and inability to govern may facilitate terrorist operations (as in Afghanistan), the development of destructive weaponry (as in North Korea), or severe humanitarian crises and human rights abuses (as in Sudan, North Korea, Zimbabwe, and elsewhere).

Traditional perspectives focus on pivotal weak states—particularly Pakistan or North Korea, possessors of nuclear arms whose actions have the potential to affect regional balances of power or incite large-scale conflict or destruction. Yet transnational threats have emerged from unexpected places as well. At the end of the Cold War, few foresaw the transnational threat posed by a war-ravaged Afghanistan, and even fewer could have predicted that it would play an instrumental role in one of the most devastating attacks on the United States in the nation's history.

Afghanistan's harboring of al Qaeda's operations and the cocaine industry in Colombia are reminders that weak states can harbor global threats—stark examples whose complex causes are easy to overlook. A key factor is the absence of sustainable development, which relies on basic political goods that many low-income countries simply do not possess the institutional capacity or will to deliver. Lacking even minimal levels of resilience and capacity, they are less able to control illicit networks of terrorists or criminals, more prone to be pulled into cross-border conflict, and more vulnerable to devastating pandemics.

Yet, as the development and security theorist Stewart Patrick observes, "the weakest states are not necessarily the poorest."¹⁵⁵ Economic performance alone will not predict which states will weaken or fail. A 2005 World Bank "Governance Matters" data set shows that among the 44 countries that rank lowest in their ability to govern are several classified as being lower-middle income, such as Venezuela and Iran, while some of the lowest-income nations—Gambia and Niger—do not make the list.¹⁵⁶

¹⁵² Pan, "China, Africa and Oil."

¹⁵³ *National Security Strategy of the United States of America* ([Washington, DC: The White House], 2002)

¹⁵⁴ State strength is most often measured by the state's ability and willingness to provide fundamental political goods associated with statehood, notably: physical security, legitimate political institutions, economic management, and social welfare.

¹⁵⁵ Stewart Patrick, "Weak States and Global Threats," 31.

¹⁵⁶ Countries were measured along six dimensions: voice and accountability, political instability and violence, government effectiveness, regulatory burden, rule of law, and control of corruption. Daniel Kaufmann, Aart Kray, and Massimo Mastruzzi, *Governance Matters IV: Governance Indicators from 1996–2004* (Washington, DC: World

Weak states and collapsed states also produce ungoverned spaces that present growing danger to their own people and to others. Throughout Africa, Asia, and Latin America are vast areas that, though contained within the borders of states, show no signs of the central government's presence and authority. Their populations are vulnerable, abandoned by governments unable or unwilling to protect them and provide them services. Such ungoverned spaces have expanded over the past decade, and they now range from the border regions of Pakistan and Afghanistan to the Sulawesi-Mindanao arc, from East Africa to the north Caucasus to Central America.¹⁵⁷ They pose a unique challenge to the future security environment as they may increase internal and regional instability, becoming breeding grounds for terrorism and other transnational threats.

States that are unable to exercise “responsible sovereignty,” according to Secretary of State Condoleezza Rice, may spill over terrorism, weapons, and other dangers beyond their borders.¹⁵⁸ *Foreign Policy* magazine notes in its 2007 Failed State Index that “porous borders, cultural affinity, and widespread underdevelopment often bind populations.”¹⁵⁹ The secondary effects of these “bound” populations can include violations of human rights, the export of violent conflict, and the breeding of transnational threats that can reach foreign shores.

Globalization not only has spurred population flows but has had the effect of emphasizing political identities and religious and ethnic differences, thereby imposing new stresses on governments.¹⁶⁰ Ethnic and religious conflicts that were once limited to states or regions have spread because of increased mobility, increased will among a range of once-peaceful groups to take up arms, and the diffusion of information via modern communications technologies.¹⁶¹ In many instances, sectarian, tribal, or ethnic divisions—or the perception of such divisions—exacerbate tensions between the sides of a conflict that may have originated in an entirely separate issue.¹⁶² These religious and ethnic cleavages—in such places as Southeast Asia, Europe (not only the Balkans, but increasingly within Western Europe), and West Africa, where Christian-Muslim tensions could lead to internal and regional instability—threaten vital freedoms and will contribute to future conflict, unless competent government institutions can be put in place.

In the future, the conditions contributing to state weakness may grow worse, further undercutting the institutions responsible for protecting vulnerable populations and providing basic human rights. New models of authoritarianism and weak democracies alike will be challenged by economic and environmental problems that foster instability, and they will be vulnerable to the shocks associated with interruptions in energy flows. Only through good governance will state institutions gain the adaptive capacity to ward off such threats and provide the framework for sustainable economic development and

Bank, 2005). Countries were measured along six dimensions: voice and accountability, political instability and violence, government effectiveness, regulatory burden, rule of law, and control of corruption.

¹⁵⁷ Angel Rabasa et al., *Ungoverned Territories: Understanding and Reducing Terrorism Risks* (Santa Monica, CA: RAND Corporation, 2007), xviii.

¹⁵⁸ “A Conversation with Condoleezza Rice,” *American Interest* 1, no. 1 (Autumn 2005): 47–50

¹⁵⁹ *Foreign Policy*, “Failed State Index 2007,” The Peace Fund and Carnegie Endowment for International Peace, http://www.foreignpolicy.com/story/cms.php?story_id=3865&page=5.

¹⁶⁰ National Intelligence Council, *Mapping the Global Future: Report on the National Intelligence Council's 2020 Project* (December 2004), 79.

¹⁶¹ *Ibid.*

¹⁶² *Ibid.*, 71.

greater access to healthcare and education. Promoting good governance and vital freedoms is a key element of the future security agenda, as it will help ensure global stability and reduce the reach of transnational threats in an ever more integrated world.

Human Rights and Governance: Trends in Human Population and Settlement

The overall growth in world population, increasing numbers of immigrants and refugees, an aging population in developed countries, a growing “youth bulge” in developing nations, and urbanization will increasingly make stability harder to maintain in weak states and regions. As their populations grow rapidly, countries with weak infrastructures may be strained past the breaking point if roads, sewer systems, schools, and health services cannot keep pace with demand. The demographer and political economist Thomas Malthus famously argued in *An Essay on the Principle of Population* (1798) that rapid population growth, if unchecked, could lead to food and freshwater scarcity, environmental degradation, ungovernable slums filled with diseased populations in megacities, and exponential increases in conflict. Malthus’s predictions may not yet have been borne out—the world survived and indeed made progress in the 20th century despite a 6,000 percent increase in human population—but future developments promise to stress the planet in ways never before experienced. The embrace of a resource-intensive style of living by billions of people is something entirely new.

The current global population stands at 6.4 billion.¹⁶³ By 2015 it will reach 7.3 billion, and 8.3 billion by 2030. For the first time in history, more people inhabit urban than rural areas; and by 2030, the proportion living in cities will rise to almost 60 percent.¹⁶⁴ Urban areas will absorb the entirety of the planet’s population growth—almost all of it in the developing world.¹⁶⁵ “Population growth,” as the UN Population Division observes, is “becoming largely an urban phenomenon concentrated in the developing world.”¹⁶⁶

In the past, cities promised those streaming into them better lives and more economic opportunities, but those promises may no longer hold. In his examination of the phenomenon of rapid urbanization in the developing world, Mike Davis concludes that the “cities of the future, rather than being made out of glass and steel as envisioned by earlier generations of urbanists, are instead largely constructed out of crude brick, straw, recycled plastic, cement blocks, and scrap wood.”¹⁶⁷ Urbanization is taking the form of massive slums on the outskirts of more traditional cities. Their construction is informal (most residents are squatters) and outside the reach of municipal governance. These new urban slums lack even services as basic as water and sanitation. Densely populated, they offer ideal safe havens for radical movements and criminal organizations.

¹⁶³ According to UN medium variant projections. See United Nations Department of Economic and Social Affairs/Population Division, “World Population Prospects: The 2006 Revision Population Database,” <http://esa.un.org/unpp/>.

¹⁶⁴ According to UN medium variant projections. See United Nations Department of Economic and Social Affairs/Population Division, “World Urbanization Prospects: The 2007 Revision Population Database,” <http://esa.un.org/unup/>.

¹⁶⁵ United Nations Department of Economic and Social Affairs/Population Division, “World Urbanization Prospects: The 2007 Revision,” http://www.un.org/esa/population/publications/wup2007/2007WUP_Highlights_web.pdf.

¹⁶⁶ Ibid.

¹⁶⁷ Mike Davis, *Planet of Slums* (New York: Verso, 2006), 19.

Challenges and Opportunity in a New Security Paradigm

Although the 2004 tsunami disaster and subsequent humanitarian relief efforts highlighted America's leadership and nontraditional military capabilities, similar opportunities to provide assistance and prevent conflict exist on both smaller and larger scales across the globe, but are not exploited. The post-tsunami operations helped the U.S. military clearly see that such efforts had profound impacts in areas whose stability was in question, as they enabled the United States to proactively engage existing and future threats that were seemingly unrelated. This shift in perspective was codified in the 2007 United States Navy Maritime Strategy, which states that "preventing wars is as important as winning wars."¹⁶⁸

In the future, the successful promotion of economic, environmental, and energy security, human rights, and good governance faces three significant challenges. The first is a lack of genuine understanding among U.S. policymakers of the new international security paradigm. More traditional security challenges outlined in the other four mission areas included in this report appendix are without doubt critical to national security. But, increasingly, the complexity of the international system and the suffering of others have direct implications for every citizen of the United States. Difficult choices in devoting resources to and even monitoring these threats lie ahead. Those choices are connected to the second critical challenge in this new security environment: building and maintaining capabilities to address these vectors of instability. The task is daunting, and as the international system's most powerful state, the United States is expected to lead the way. Whether the problem is global warming or an economic crisis, U.S. inaction erodes confidence in the United States, the current international system, and globalization itself. None of these challenges has an obvious solution, and each requires a set of integrated national security capabilities across the spectrum. Thus the third critical challenge is to translate U.S. action and leadership into collective response. Joint efforts at the international level are necessary to address the new problems faced in the security environment. As the Commission on Human Security's 2003 report, *Human Security Now*, concluded, "[A] network of public, private, and civil society actors who can help in the clarification and development of norms, embark on integrated activities, and monitor progress and performance" is required to promote a broad concept of human security. The task of linking initiatives and spurring collective action by concerned states, international organizations, and civil society remains difficult, as traditional security missions continue to dominate the attention of states and consensus on nontraditional priorities remains elusive. Too often the international community is able to act in concert only when spurred by the shock of such events as the 2004 tsunami. Yet in the future, the price of such reluctance to cooperate will grow. Unless countries act together, no country on its own, no matter how powerful, will be safe.

¹⁶⁸ United States Navy, *A Cooperative Strategy for 21st Century Seapower*, October 2007.

Building Alternative U.S. Military Postures

Richard W. Weitz

Force-Building Methodology

The study team established a hierarchy of capability blocks that allows for consideration of alternative military postures for managing the emerging international security environment.⁴⁹¹

- *Contingency-based* capability blocks include:
 1. Major Combat
 2. Post-Conflict
 3. Domestic Defense
 4. Small-Scale Deployment
- *Force-enabling* capability blocks include:
 1. Mobility and Logistics (such as air and maritime transportation and supply assets)
 2. Command, Control, Communication, Intelligence, Surveillance and Reconnaissance (C3ISR)
 3. Science and Technology (S&T) Programs
 4. Infrastructure (institutional support activities)

Alternative Force Methodology

- Alternative force postures constructed by altering the distribution of conventional (non-nuclear) assets from those found in the current baseline force.
 - Infrastructure spending remains constant across the alternatives.
- Alternatives exhibit uniquely focused asset distributions, reflecting underlying assumptions regarding main security risks to U.S. interests.
- Alternative Force Postures optimized to manage specific challenges:
 1. Great Power Competition
 2. Counter-WMD
 3. Counter-Terror
 4. Homeland Security

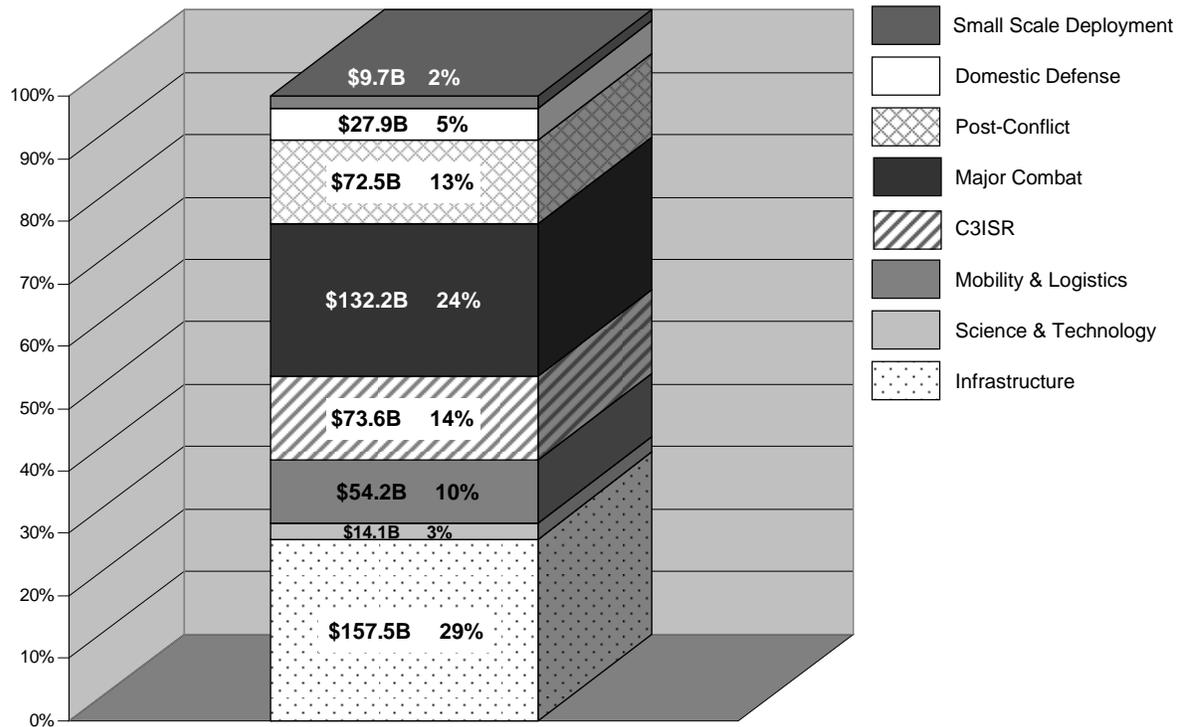
⁴⁹¹ Uses mostly FY 2006 budget data to allow for detailed breakdown of current DoD force spending.

- Systems tradeoffs and risk assessments were then analyzed according to seven common assessment categories.

The Choice: Linking Forces to Future Security Challenges

- Where We Are Today: The Baseline
- Where We May Need to Be Tomorrow: The Challenges
 - Struggle Against Radical Islamists
 - Mitigate Proliferation Threats
 - Provide Homeland Security
 - Maintain Global and Regional Security
 - Promote Economic, Environmental, and Energy Security and Human Rights (primarily non- DOD)
- What conventional force capabilities would you (the decisionmaker) increase/decrease if budget is held approximately constant to meet these future challenges?

Baseline



Force Components

Mobility & Logistics

- 41 USAF squadrons
- 64 USA logistics units
- 142 Support and logistics ships

C3ISR

- 14 USAF Squadrons
- 520 UAVs
- 251 Land radar units
- 3 AFSOC special operations wings

Major Combat

- 115 Air squadrons
- 58 Army brigades
- 4 Marine divisions
- 279 Ship battle forces including 11 Carriers, 4 SSGNs, and 53 SSNs

Post-Conflict

- 7 Stryker brigade combat teams
- 5 USA infantry brigades
- 5 USA special forces groups
- 1 Ranger regiment
- 3 Unconventional war battalions
- 12 Military police brigades
- 15,339 Naval construction forces
- 3 Psy-ops groups

Small Scale Deployment

- 8 SEAL teams
- 1 Ranger regiment
- 46 USAF SOF squadrons

Domestic Defense

- 18 National Guard infantry brigades
- 12 CERFP teams
- 52 Civil air patrol wings
- 27 Aegis BMD ships
- 10 Radar systems

Baseline Force: Assessment Categories

Great Power Competition

Global military presence and power projection assets enable substantial, but not optimized, conventional deterrence and dissuasion capability.

Counter-WMD

Substantial forward presence bolsters visibility of U.S. conventional extended deterrence guarantees and allows for global strikes against WMD using many nearby as well as homeland-based platforms; limited domestic defense investment leaves homeland relatively vulnerable to WMD.

Counter-Terror

Requires supplemental funding to sustain major post-conflict stability operations essential for converting military success into political victory and preventing the conditions which foster terrorist sanctuaries.

Homeland Security

Limited overall spending and forward offensive orientation leaves the homeland relatively vulnerable to terrorism and other asymmetric attacks.

Current “Inbox”

- Resetting the force: supplemental funding required to replace attrition loss of legacy systems.
- Rotation: multiple tours, extended deployments, and mandatory reserve call-ups.
- Operation Iraqi Freedom: mission necessitates massive supplemental budget.
- Operation Enduring Freedom: current operations sustainable.

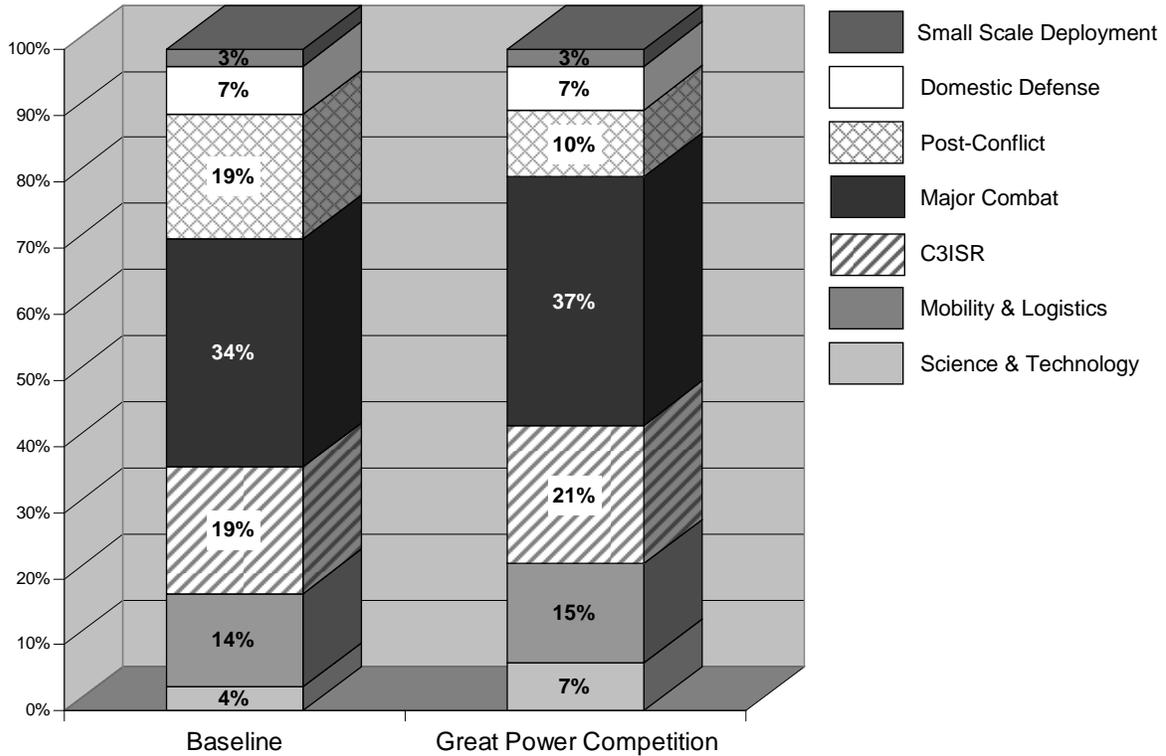
Steady-State vs. Surge Capacity

Large steady-state force presence abroad, with high operation tempo and reset/rotation demands, limits surge capacity since current operations require high spending on operations and maintenance.

Investment for Future Challenges

Suffers major “bow-wave” problems for planned procurements; low S&T spending may result in unpleasant technological surprises by adversaries.

Great Power Competition



Delta from Baseline

S&T

- +Space-based systems
- +Next-generation leap-ahead technologies

Mobility & Logistics

- +Airlift and transport systems
- +High-speed Sealift Ships

C3ISR

- +Next generation UAVs

Major Combat

- +3 Aircraft carriers and carrier wings
- +6 Submarines (3 Virginia Class, 3 SSGN)
- +1 Marine Division
- 4 Army brigades

Post-Conflict

- 5 Army brigades
- SOF forces

Great Power Focus: Assessment Categories

Great Power Competition

Optimal force for deterrence and dissuasion; focus on air and maritime domain rather than protracted ground wars.

Counter-WMD

C3ISR assets allow for enhanced WMD detection, while long-range strike resources enable limited counter-WMD strikes. Reduced land forces may undercut ability to secure regime change in countries of proliferation concern.

Counter-Terror

Land forces are insufficient for large post-conflict contingences to prevent or eliminate terrorist sanctuaries; reduced SOF downgrades force capacity for neutralizing terrorist organizations; would require diverting limited C3ISR assets from great power monitoring.

Homeland Security

Other investment priorities restrain homeland defense resources.

Current “Inbox”

- Resetting the force: considerable air and maritime reset with upgrade from legacy systems; resetting land forces feasible with reduced land force component.
- Rotation: smaller manpower pool for force generation and rotation.
- Operation Iraqi Freedom: no specially targeted funds in regular DOD budget.
- Operation Enduring Freedom: no specially targeted funds in regular DOD budget.

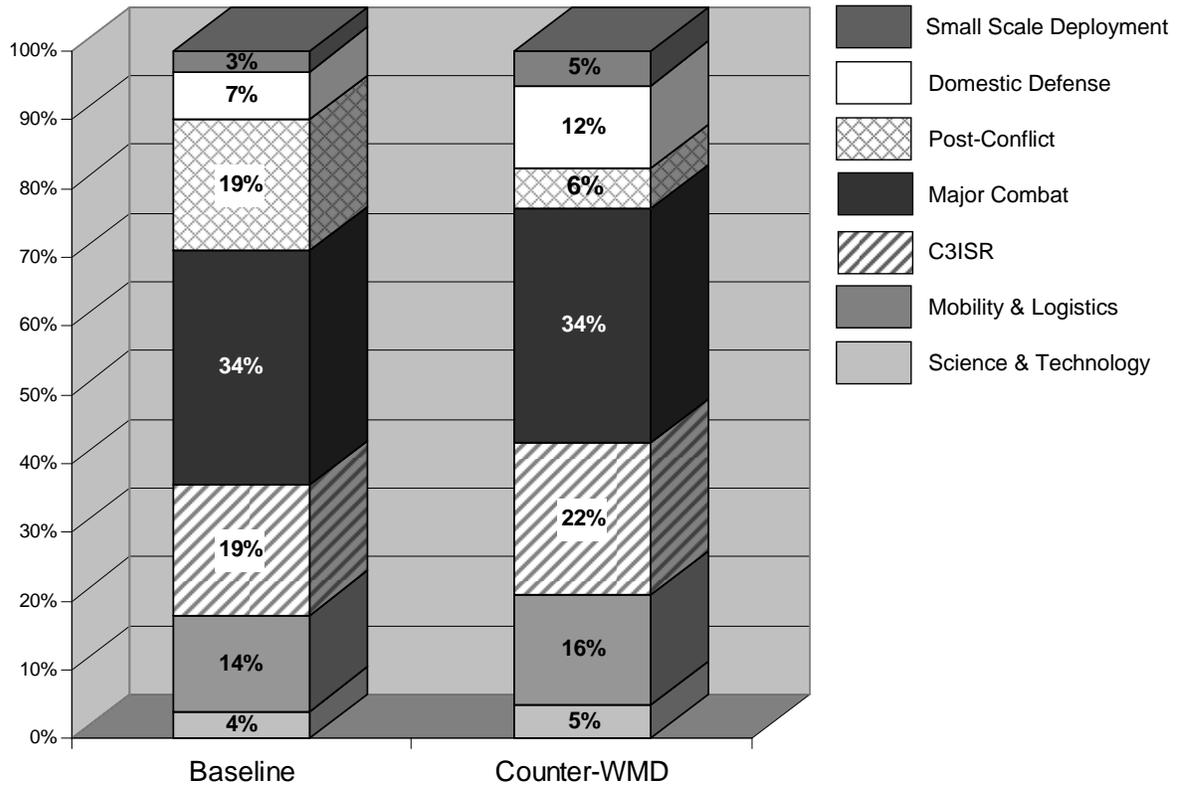
Steady-State vs. Surge Capacity

Extensive steady-state maritime and air assets in forward regions; substantial amphibious, naval, and air surge capacity but limited land surge capability.

Investment for Future Challenges

Greater S&T spending promotes continued technological superiority, including sufficient funds for high-risk, potentially high-reward systems.

Counter-WMD Focus



Delta from Baseline

S&T

+Advanced counter-WMD, EMP technologies

Mobility & Logistics

+Airlift and transport systems
+MPF ships

C3ISR

+Next-generation UAVs

Major Combat

+1 SSN
-1 Army brigade

Post-Conflict

+2 SR brigade with Stryker unit
-5 Army brigades

Domestic Defense

+BMD systems
+BMD RDTE
+CRBNE systems

Counter-WMD Focus: Assessment Categories

Great Power Competition

Maintains baseline force deterrence and dissuasion capacity regarding potential great power competitors and regional rogues.

Counter-WMD

Assets optimized for global, counter-WMD strike: augmented C3ISR resources enhance WMD detection; long-range strike capabilities against WMD-armed terrorists and states, but would likely require considerable assistance from other countries for post-strike regime-change occupations.

Counter-Terror

Global strike, C3ISR, and SOF capabilities enable long-range operations against terrorists, but force structure possesses limited resources for post-conflict operations and other protracted military engagements.

Homeland Security

More resources for domestic defense against CBRN and ballistic missile attacks.

The Current “Inbox”

- Resetting the Force: substantial replacement of legacy systems with upgrading of systems for counter-WMD mission.
- Rotation: rotational pool insufficient for major post-conflict occupation without allied contributions or large reserve force call up.
- Operation Iraqi Freedom: unable to support current scale of OIF operations.
- Operation Enduring Freedom: unable to support current scale of operations.

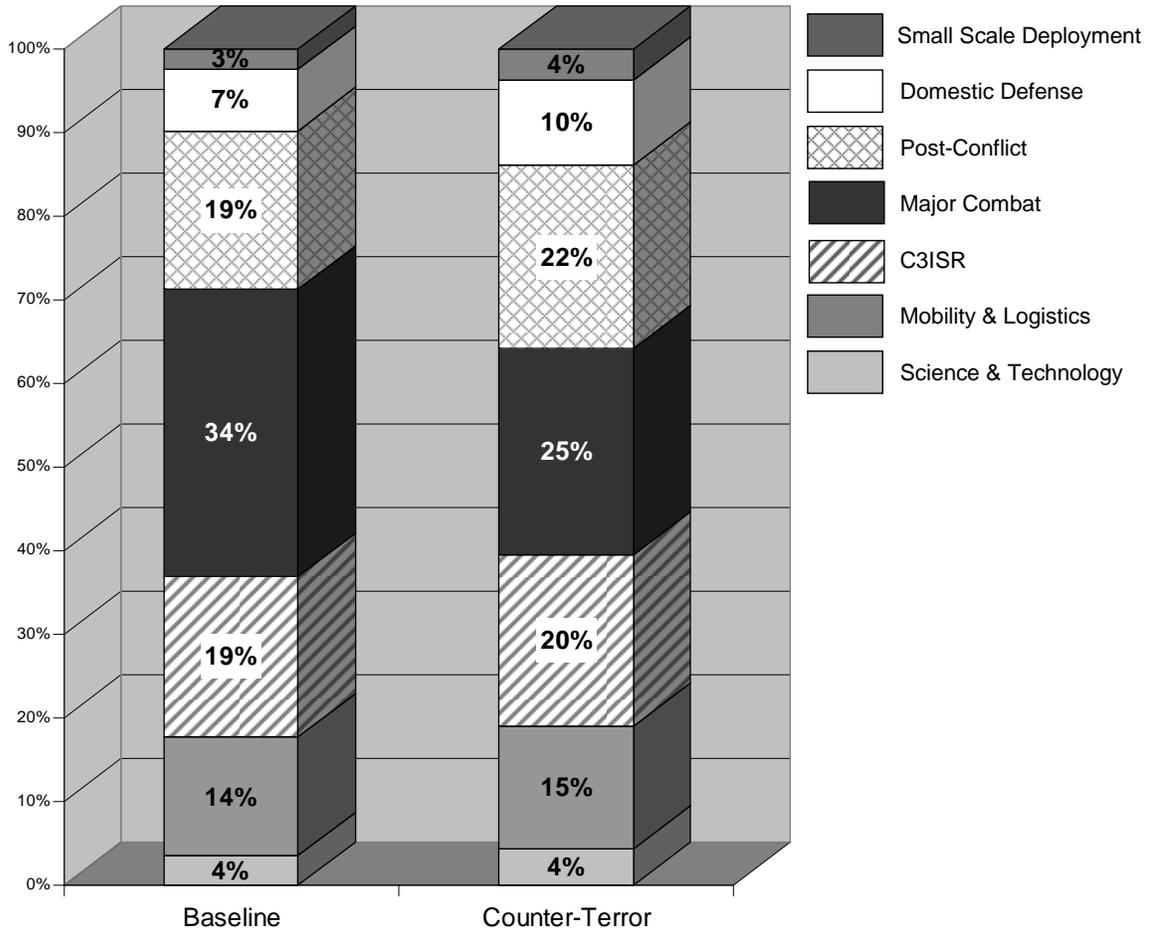
Steady-State vs. Surge Capacity

Restricts steady-state capacity to prompt conventional global strike by maritime and air assets; can surge for short “shock and awe” attacks against WMD assets.

Investment for Future Challenges

Vulnerable to technological “leap-frogging” by great power competitors given S&T focused on developing additional capabilities for WMD detection, defense, disruption, etc.

Counter-Terror Focus



Procurement Priorities

Mobility & Logistics

+MPF ships

C3ISR

+Next-generation UAVs

+MRAPs

Major Combat

-5 aircraft carriers

-100 Battle force ships

-20 Army brigades

-16 Air squadrons

Post-Conflict

+10 SR brigades

+40 Stryker brigades

+45 LCS

+Force protection assets (anti-IED, counter-sniper)

+Special Operations Forces

Small Scale Deployment

+2 Marine expeditionary units

Domestic Defense

+CRBNE defenses

+BMD systems

Counter-Terror Focus: Assessment Categories

Great Power Competition

Focus on small-scale combat against terrorists weakens deterrence and dissuasion of traditional great power rivals.

Counter-WMD

Improved ability to detect and destroy individual WMDs possessed by terrorists; limited operational capacity against countries possessing large WMD arsenals.

Counter-Terror

Optimized for rapid, decisive counter-terror operations; many assets suitable for moderately severe counter-insurgency and SR missions.

Homeland Security

Domestic defense against CRBNE terrorism improves; missile defense against more traditional threats remains modest.

The Current “Inbox”

- Resetting the Force: largely sustainable.
- Rotation: rotational pool to support modest stability operations.
- Operation Iraqi Freedom: able to maintain current operations.
- Operation Enduring Freedom: improved ability to manage terrorist threats.

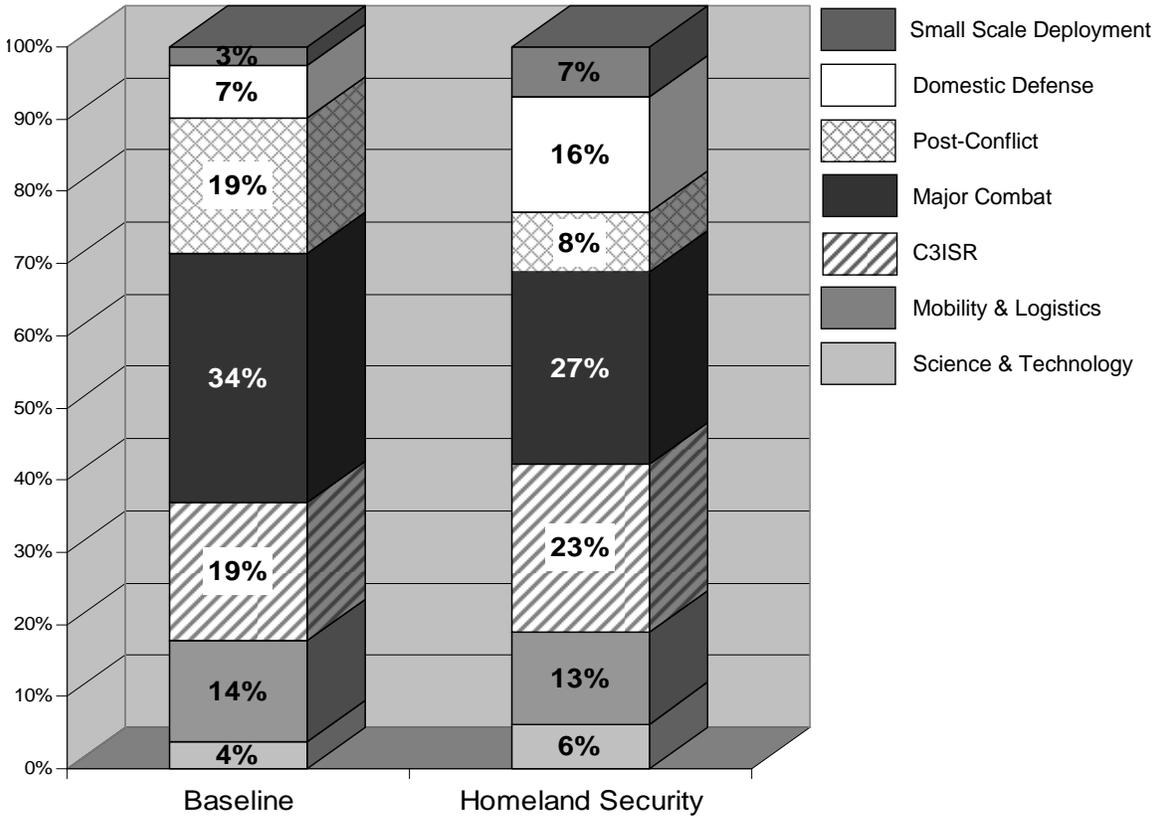
Steady-State vs. Surge Capacity

Considerable steady-state and surge capacity for land and littoral operations; limited surge capabilities for deep water and air missions.

Investment for Future Challenges

Increased S&T investment against terrorist threats; reduced S&T devoted to meeting potential great power challenges except for cyber threats and other overlapping challenges.

Homeland Security Focus



Delta from Baseline

S&T

+Advanced missile defense technologies
 +Advanced counter-EMP/-WMD technologies

Mobility and Logistics

-5 Air squadrons

C3ISR

+Latest-generation UAVs

Major Combat

-19 Army brigades
 -5 Aircraft carriers
 -106 Battle Force Ships
 -9 Air squadrons

Post-Conflict

-5 Army brigades

Small Scale Deployment

+SOF
 +Littoral Combat Ships

Domestic Defense

+10 Homeland Defense brigades
 +BMD systems
 +BMD RDTE
 +CRBNE defenses
 +Coastal patrol craft

Homeland Defense Focus: Assessment Categories

Great Power Competition

Severely reduced major combat as well as mobility and logistics capabilities limited ability to deter and dissuade potential adversaries and reassure allies.

Counter-WMD

Enhanced C3ISR assets improve WMD detection capacity; augmented small-scale deployment resources allow for small, global strike, counter-WMD missions; however, capacities for regime change through prolonged military occupation decline.

Counter-Terror

Improved C3ISR and prompt global strike useful for detecting and destroying terrorist cells with military means; insufficient forward-based forces for undertaking major post-conflict missions to prevent the (re)emergence of terrorist sanctuaries.

Homeland Security

Provides comprehensive, multi-layered defenses for direct military threats against U.S. homeland; improved littoral defense, disaster management, missile defense architecture, and military support for civil authorities.

The Current “Inbox”

- Resetting the force: forward-based forces return home; full reset of ANG and other US-based military units having homeland defense mission).
- Rotation: limited assets for prolonged major overseas operations but limited and short-term extended strike possible (i.e., against terrorists overseas preparing to attack US homeland).
- Operation Iraqi Freedom: unable to maintain at current levels.
- Operation Enduring Freedom: unable to maintain at current levels.

Steady-State vs. Surge Capacity

Low steady state capability with considerable surge potential for U.S.-based forces.

Investment for Future Challenges

Focus of S&T investment is on improving homeland defense assets, with limited spill over to counter-WMD and counter-terror missions.

Possible Trade-Offs

Struggle Against Radical Islamists

Possible Capabilities to Increase

- General Purpose Forces: Littoral Assets
- SSTR: Stryker units, Provincial Reconstruction Teams, Civil Affairs and Psyops
- Special Operations Forces: MARSOC, Antiterrorism Battalions, Army SOF, Navy SEAL teams, UAV special ops squadrons
- Domestic Defense: Consequence Management Response Force, Port Security Units, Air Defense

Possible Capabilities to Decrease

- General Purpose Forces: Strategic Bombers, Heavy Brigades
- SSTR: None
- Special Operations Forces: None
- Domestic Defense: BMD

Mitigate Proliferation Threats

Possible Capabilities to Increase

- General Purpose Forces: Global Strike, Agent Defeat Weapons, Stealth Assets, Littoral Assets
- SSTR: Naval Expeditionary Combat Command
- Special Operations Forces: SOF Deep-strike, Special Recon Units
- Domestic Defense: Consequence Management Capabilities, BMD

Possible Capabilities to Decrease

- General Purpose Forces: Heavy Brigades, SSNs, AH-64 fleet, Artillery Assets
- SSTR: Stryker units, MRAPs
- Special Operations Forces: None
- Domestic Defense: None

Provide Homeland Security

Possible Capabilities to Increase

- General Purpose Forces: Littoral Assets, Global Strike
- SSTR: None
- Special Operations Forces: None
- Domestic Defense: Consequence Management Response Force, Port Security Units, Air Defense, BMD, dedicated Homeland Defense NG Units

Possible Capabilities to Decrease

- General Purpose Forces: Expeditionary Forces, Strategic Bombers, Heavy Brigades, SSNs, AH-64 fleet, Artillery Assets
- SSTR: Stryker units
- Special Operations Forces: None
- Domestic Defense: None

Maintain Global and Regional Security

Possible Capabilities to Increase

- General Purpose Forces: Ship Battle Forces, Forward-based air and ground units, strategic bombers
- SSTR: Strykers, Naval Expeditionary Combat Command
- Special Operations Forces: None
- Domestic Defense: None

Possible Capabilities to Decrease

- General Purpose Forces: None
- SSTR: None
- Special Operations Forces: None
- Domestic Defense: BMD, Air Defense, CERFP

Methodological Problems

- In modern military operations, it is difficult to tell where major combat, post-conflict, domestic defense and small-scale deployment begin and end.
- Even when possible to secure general agreement regarding how to categorize certain military operations:
 - Analysts still argue about which capabilities or military assets contribute most to achieving U.S. objectives in those environments;
 - Not least since most assets could have important and diverse roles in every environment.
- Attempting to divide specific assets based on primary mission capability proved contentious.
 - Many assets conduct missions they were not originally designed for.
 - Many new assets are claimed to be intentionally designed to be able to carry out multiple missions.
 - But assigning one asset to multiple categories failed to induce decision makers to articulate their implicit risk assessments by forcing them to make tradeoffs.
- US military forces can often contribute to more than one contingency or capability.
 - And their advocates and program managers will stress their multiple contributions.
 - Dividing the general purpose forces among the different categories is especially problematic.
- Department of Defense does not formally divide its budget by military contingency
 - The Military Services fund and classify their forces differently.
 - Funding for the various categories appears in both the regular annual DoD budget as well as in the periodic supplemental budgets.
 - DoD and external assessments regarding military contributions to homeland security/homeland defense is most problematic.
 - Most often treated as a lesser-included category for planning purposes.
 - DoD purchases few capabilities solely or even primarily to support homeland defense requirements.
- Reviewers disagreed over the subjective evaluations of the advantages and risks entailed in each alternative.
 - But objective quantitative measures for many common assessment categories do not exist or are problematic.
 - Many existing measures of effectiveness count inputs rather than outcomes.



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