

U.S. NUCLEAR AND EXTENDED DETERRENCE: Considerations and Challenges

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FOREWORD

DURING THE NUCLEAR AGE, U.S. policymakers and strategists have grappled with deterrence of attack against the United States and extended deterrence, that is, how to deter an attack against American allies and partners. The Nuclear Posture Review, released in April 2010, lays the foundation for the Obama administration's effort to deal with this problem. U.S. policies for maintaining effective deterrence and extended deterrence in turn shape U.S. approaches to nuclear arms reduction and arms control.

When President Obama announced in April 2009 his goal of moving to a world free of nuclear arms, he made clear that much had to be accomplished to achieve that goal and that, until then, the United States would maintain an effective nuclear deterrent. As Washington pursues nuclear arms reductions, including those beyond the New START Treaty, U.S. officials must consider whether the remaining force will suffice not just to protect the United States but also to protect U.S. allies and partners as well.

Extended deterrence traditionally has received greatest attention with regard to how it is maintained in Europe. During the Cold War, U.S. strategic systems and tactical nuclear weapons forward-deployed in Europe underpinned NATO's defense against

Soviet and Warsaw Pact forces with significantly larger conventional militaries. As NATO defines a new strategic concept for the November 2010 summit, nuclear policy and the presence of U.S. nuclear weapons in Europe will be a key question. The U.S. "nuclear umbrella" also covers American allies and partners in East Asia and the Middle East.

The purpose of this monograph is to examine the various considerations that Washington policymakers must weigh in considering how to maintain an effective nuclear deterrent, including when they prepared the Nuclear Posture Review. This includes regional considerations—Europe, East Asia and the Middle East—as well as the challenges posed by chemical and biological weapons, and the possibility of nuclear weapons in the hands of non-state actors. This monograph aims to explain these varied considerations rather than advocate a particular deterrence stratagem or policy approach. In doing so, we also hope to provide some context for considering how the United States can and should approach nuclear arms reductions in the future.

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1. INTRODUCTION

NUCLEAR DETERRENCE has been a central element of American security policy since the Cold War began. The deterrence concept is straight-forward: persuade a potential adversary that the risks and costs of his proposed action far outweigh any gains that he might hope to achieve. To make deterrence credible, the United States built up powerful strategic, theater and tactical nuclear forces that could threaten any potential aggressor with the catastrophic risks and costs of a nuclear retaliatory strike against his homeland.

During the Cold War, the primary focus of this deterrent was the Soviet Union. The Soviets built their own nuclear force targeting the United States, producing a situation of mutual deterrence, often referred to as “mutual assured destruction” or MAD. Many argue that MAD worked and kept the United States and Soviet Union from an all-out war—despite the intense political, economic and ideological competition between the two—as the horrific prospect of nuclear conflict gave both strong incentives to avoid conflict. Others note that it was too often a close thing: crises, such as those over Cuba and Berlin, brought the two countries perilously close to nuclear war.

As the United States developed a post-war alliance system, the question of extended deterrence—the ability of U.S. military forces, particularly nuclear forces, to deter attack on U.S. allies and thereby reassure them—received greater attention. Extending deterrence in a credible way proved a more complicated proposition than deterring direct attack. It was entirely credible to threaten the Soviet Union with

the use of nuclear weapons in response to a Soviet attack on the United States. But how could the United States make credible the threat to use nuclear weapons against the Soviet homeland in response to a Soviet attack on U.S. allies in Europe? Or, as it was often put, how could an American president credibly persuade his Soviet counterpart that he was prepared to risk Chicago for Hamburg?

Getting the answer right was a major preoccupation for Washington in the 1950s, 1960s, 1970s and 1980s. It led to the deployment of thousands of U.S. nuclear weapons in Europe; consideration of a multilateral NATO nuclear force; and the 1979 NATO “dual-track” decision on deploying and negotiating limits on long-range theater nuclear missiles in Europe. Deciding not to compete with the Soviet Union and Warsaw Pact in terms of troops, tanks and artillery, NATO adopted a declaratory policy that embraced the possible first use of nuclear weapons, including in response to an attack by the Warsaw Pact only with conventional forces.

Ensuring the credibility of the extended deterrent also posed challenges in the Pacific, where the U.S. nuclear umbrella covered Japan, South Korea, Australia and, until the 1980s, New Zealand. This led to the deployment of U.S. nuclear weapons, including in South Korea and on board U.S. naval vessels, to bolster the extended deterrent commitment. Though not supported by multilateral or bilateral treaties, the deterrent also covered countries in the Middle East, including Israel during the October 1973 war and even an avowed adversary, Iran, following the Soviet invasion of Afghanistan in 1979.

Much has changed since the end of the Cold War and the collapse of the Soviet Union in 1991. In April 2009, President Obama adopted the goal of a world free of nuclear weapons. He made clear, however, that that is a long-term objective that will be difficult to reach. In the meantime, nuclear deterrence will continue to figure prominently in the U.S. national security strategy. Washington and Moscow launched new negotiations to reduce their strategic nuclear forces in May 2009, and Presidents Obama and Medvedev signed the New START Treaty (Strategic Arms Reductions Treaty) on April 8, 2010. A central consideration for both sides in this process is how they can maintain robust and survivable deterrent forces that would continue to serve as the ultimate guarantor of their national security.

The Obama administration addressed questions related to U.S. nuclear forces and declaratory policy in its Nuclear Posture Review, which it completed in early April 2010. The review disappointed some arms control proponents by not making deterrence of nuclear attack on the United States, its allies and partners the “sole purpose” of U.S. nuclear forces. The review set creating conditions for adopting “sole purpose” at a future point as a goal, and declared deterring nuclear attack on the United States, its allies and partners the “fundamental purpose” of U.S. nuclear weapons. The Nuclear Posture Review also stated that the United States would not use or threaten to use nuclear weapons against non-nuclear weapons states that were parties to and observing their obligations under the Non-Proliferation Treaty (NPT). The review eschewed a policy of “no first use” of nuclear weapons, that is, a policy under which the United States would only use nuclear weapons in response to a nuclear attack on the United States, its allies or partners.

In preparing the Nuclear Posture Review, the administration had to address a number of questions. How could the president’s desire to reduce the role and number of nuclear weapons in U.S. nuclear policy be reflected in declaratory policy? What opportunities for reconsidering U.S. and NATO deterrence policy arose as a result of the decline of Russian conventional military capabilities? How could the

United States reassure allies in Europe and Asia that a change in policy would not signify a weakening of U.S. commitment to their security? How would a continuing process of reducing U.S. and Russian nuclear forces affect the small number of U.S. tactical nuclear weapons still deployed in Europe? What did the rise of China and North Korea’s fledgling nuclear weapons program mean for extended deterrence for Japan and other U.S. allies in East Asia? Should Washington consider formally extending its nuclear umbrella in the Middle East in light of the potential threat posed by a nuclear aspirant, Iran?

The purpose of this monograph is to explore the considerations that shaped the president’s Nuclear Posture Review and to examine the ability of the United States to maintain effective extended deterrence for its allies. There are many considerations.

The first set of questions revolves around central deterrence: deterring an attack on the United States. This poses far fewer challenges than extending deterrence to allies, as the issue is protecting the American homeland, not risking Chicago for Hamburg. A nuclear response to an attack on the United States is credible. If Washington had no alliance commitments, the president might well have adopted a “sole purpose” policy stating that the only purpose for U.S. nuclear forces was to deter nuclear attack on the United States or its forces.

Extended deterrence, however, introduces a range of more complex factors. The Nuclear Posture Review stated that the United States would maintain the ability to forward deploy nuclear-capable fighter-bombers and heavy bombers but deferred issues regarding NATO nuclear policy and the stationing of U.S. nuclear weapons in Europe to a discussion within the Alliance. The striking geopolitical changes in the European landscape over the past 20 years have created, in the view of many, the possibility for change in NATO policy. The Warsaw Pact no longer exists, while NATO now numbers 28 member states and, in contrast to the Cold War, is superior to Russia in conventional forces. A number of European statesmen have called for a change in NATO nuclear policy and for the removal of U.S. nuclear weapons

from Europe. On the other hand, NATO allies in Central Europe—concerned about Russia, particularly given its large number of tactical nuclear weapons and its 2008 conflict with Georgia—are wary of changing NATO policy or posture, as is France. The prospect of an Iranian nuclear weapon raises the question of whether a change in policy or posture would weaken reassurance of Turkey in particular.

Extended deterrence in East Asia also introduces complications. The U.S. nuclear umbrella there is provided solely by U.S. strategic forces (U.S. nuclear weapons were withdrawn from the region in the early 1990s, and the Nuclear Posture Review stated that the nuclear-armed sea-launched cruise missiles which have remained in storage would be retired). Geography, however, confers certain conventional defense advantages on island states such as Japan and Australia, and North Korea's conventional military power appears to be in decline. East Asian states, however, watch with some trepidation China's increasing military power. North Korea's nascent nuclear capability has also provoked concern. U.S. allies in the region will assess changes in U.S. declaratory policy in the context of these concerns.

The United States must also consider extended deterrence in the Middle East, though in light of very different circumstances from the Cold War. While U.S. administrations sought to deter Soviet penetration into the region, today's threat arises from within the region—the prospect of a nuclear-armed Iran. The United States and others seek to dissuade

Iran from proceeding down the path of acquiring nuclear weapons, but it is far from certain that they will succeed. One option that Washington may have to consider is how to deter and contain an Iran that might feel emboldened by its own nuclear weapons.

U.S. declaratory policy traditionally has left a degree of “calculated ambiguity” about a possible nuclear response to a chemical or biological weapons attack. The Nuclear Posture Review clarified the policy. For non-nuclear weapons states in full compliance with their NPT obligations, the United States will not use or threaten to use nuclear weapons, even in the case of a chemical or biological weapons attack by those states; instead, a chemical or biological attack would be met by a devastating conventional response. The review stated that the United States would retain the right to reconsider a nuclear response to use of biological weapons, as a hedge against uncertainty about the future course of biotechnology.

The Nuclear Posture Review attached greater importance than U.S. policy has in the past to the threat of nuclear terrorism, elevating it and nuclear proliferation to the top of the list of U.S. nuclear priorities. Deterring non-state actors, who may have nothing to hold at risk, poses a daunting challenge. One tactic, since terror groups do not have the means to produce fissile material, is to address—and perhaps threaten—states that might provide such material. Beyond that, greater efforts will be needed to deny non-state actors access to such material and disrupt terrorist networks.

2. DETERRENCE IN THE NUCLEAR AGE

MASSIVE RETALIATION

In the first years after the end of World War II, U.S. strategists struggled to craft a policy to guide nuclear weapons strategy. In January 1954, the Eisenhower administration announced its nuclear policy, which was focused on the Soviet Union and which became known as “massive retaliation.” The policy aimed to deter attack against the United States as well as to extend deterrence to American allies. It was motivated in part by a calculation that maintaining a robust nuclear strategy and force would be significantly cheaper than maintaining massive conventional forces.

Speaking at the Council on Foreign Relations, Secretary of State Dulles described the central element of the policy as “a great capacity to retaliate, instantly, by means and at places of our own choosing.” Secretary Dulles in April 1954 clarified that this did not mean large-scale use of nuclear weapons in response to any aggression:

“The important thing was to have the capacity to retaliate massively, because that would be the only fitting punishment to the greatest crime—an all-out attack on Western Europe. For lesser crimes a more appropriate measure of retaliation would be found. Dulles was thus talking about ‘flexible retaliation.’ This suggested a continuum of nuclear responses ...”²¹

Critics almost immediately began to challenge the credibility of the policy. Would the United States resort to use of nuclear weapons in response to

relatively limited acts of aggression? Would such threats of U.S. nuclear weapons use remain credible as the Soviet Union acquired greater means to deliver nuclear weapons against the United States? Those doubts were fueled by the Sputnik launch and fears that the Soviets were gaining a numerical advantage in intercontinental ballistic missiles (ICBMs)—the so-called “missile gap”—only later revealed to have been vastly overstated.

Concerns about Soviet ICBMs and the possibility of surprise attack prompted a major expansion of U.S. strategic forces in the late 1950s and early 1960s. The 1957 Gaither Commission report expressed concern about the potential threat to Strategic Air Command bombers and suggested a number of steps, including development of defenses against Soviet ballistic missile attack (launching a missile defense discussion that continues to this day). In addition to a large number of intercontinental bombers, the United States deployed ICBMs in hardened silos and submarine-launched ballistic missiles (SLBMs) in relatively undetectable, and thus survivable, submarines to build a robust and survivable nuclear force. The Kennedy administration continued the build-up, even though intelligence debunked the “missile gap.”

ASSURED DESTRUCTION, FLEXIBLE RESPONSE AND EXTENDED DETERRENCE IN EUROPE

Coming to office in 1961, the Kennedy administration moved to explicitly replace the massive retaliation policy. As President Kennedy had noted in 1960:

“Their [the Soviet] missile power will be the shield from behind which they will slowly, but surely, advance... The periphery of the Free World will slowly be nibbled away... Each such Soviet move will weaken the West; but none will seem sufficiently significant by itself to justify our initiating a nuclear war which might destroy us all.”²

Secretary of Defense McNamara in 1964 introduced the term “assured destruction.” He assumed that the ability to destroy 20-33 percent of the Soviet population and 50-75 percent of its industrial base would prove sufficient to deter Soviet attack against the United States.³ He accepted the idea that the Soviets would acquire a similar capability against the United States; hence, “mutual assured destruction” or MAD. Secretary McNamara also sought ways to increase the flexibility of U.S. nuclear forces.

While the ability to assure the destruction of the Soviet Union provided a credible deterrent against Soviet attack on America, Secretary McNamara also wrestled with the question of extending U.S. deterrence to protect NATO and other allies and reassuring them of the U.S. commitment to their security. The United States had already in the mid-1950s begun introducing U.S. tactical nuclear weapons into its NATO arsenal. Prior to its large-scale deployment of ICBMs, the United States also stationed Thor and Jupiter intermediate-range ballistic missiles with nuclear warheads in Britain and Turkey.

Britain, with cooperation from the United States, developed its own nuclear weapons capability in the 1950s. Anglo-American cooperation continued in the 1960s, with the United States sharing its SLBM technology with the British, a pattern of cooperation that continues today. In 1960, France tested its own nuclear weapon and proceeded to develop an independent nuclear force, in part due to fear that the U.S. nuclear umbrella was not reliable since the USSR could strike the United States with nuclear weapons.

The Kennedy administration considered various steps to ensure a credible extended deterrent that covered all of NATO. Washington explored with NATO

allies the idea of a multilateral nuclear force (MLF), under which U.S. nuclear-armed SLBMs would be placed on submarines or surface ships manned by NATO multinational crews. MLF would, in effect, constitute NATO’s nuclear deterrent, which hopefully would provide a more credible deterrent against Soviet attack in Europe. Moreover, MLF had a second rationale. By giving NATO allies some access to and control over nuclear weapons, it would reduce pressures that other countries, particularly West Germany, might feel to seek a nuclear weapons capability of their own. (German officials, including Chancellor Adenauer, talked in the late 1950s of the need for the German army to have a tactical nuclear capability.) In the end, the MLF idea died:

“The proposed force would add little to the programmed nuclear capability of the West; furthermore, it threatened to violate the requirement for a centrally controllable, unified strategic nuclear arsenal, which became the hallmark of the McNamara approach to strategic planning. Finally, McNamara was convinced that when the Europeans, who were supposedly clamoring for the MLF, realized that the United States would not relinquish a veto over launch and that the financial burden of creating, operating and maintaining the force would be shared among all the participants, they would quickly lose their enthusiasm.”⁴

Secretary McNamara tried to persuade NATO allies to devote greater resources to build up the Alliance’s conventional manpower and equipment and thereby place greater reliance on conventional forces to deter and, if necessary, defeat a Soviet conventional offensive. European allies, however, retained vivid memories of World War II and the destruction inflicted by modern conventional warfare just 20 years earlier. They preferred instead to rely on the deterrent threat of nuclear weapons. As the dilemma between Washington and NATO Europe was later described:

“Most Europeans, in their exposed position, prefer a strategy of deterrence by a credible threat of intercontinental punishment

(retaliation); Americans, knowing that now any use of nuclear weapons in retaliation would likely bring Soviet counter-retaliation with nuclear weapons against the American homeland, often prefer deterrence by a capacity for denial (defense) in Europe.”⁵

NATO established the Nuclear Planning Group in 1966 as a venue for discussion of Alliance policy on nuclear weapons. One year later, NATO adopted the concept of “flexible response,” which directed NATO commanders “to provide for the employment as appropriate of one or more of direct defense, deliberate escalation and general nuclear response, thus confronting the enemy with a credible threat of escalation in response to any type of aggression below the level of a major nuclear attack.”⁶

Backing this strategy was a large arsenal of U.S. tactical nuclear weapons in Europe, in addition to U.S. strategic nuclear forces. At their peak in the 1970s, American tactical nuclear weapons in Europe numbered some 7,300.⁷ Many were deployed under “dual-key” arrangements by which the U.S. military controlled the warhead while a NATO ally controlled the delivery system (e.g., a fighter-bomber with appropriate wiring for delivery of nuclear weapons).

One U.S. nuclear weapon that was not deployed was the enhanced radiation weapon or “neutron bomb,” a nuclear artillery shell that produced limited blast effects but a large burst of lethal radiation. It prompted fierce opposition in Europe; the public regarded it as immoral, while strategists feared it could make nuclear war in Europe less horrific and therefore more thinkable. The Carter administration’s decision not to deploy this weapon, even after the German government had taken the politically difficult decision of signaling its readiness to accept it, demonstrated how the question of extended deterrence could create political tensions within the Alliance.

Soviet deployment at the end of the 1970s of an advanced ballistic missile, the SS-20, prompted a

new debate within NATO over how to maintain the credibility of the U.S. extended deterrent. (While primarily deployed to target Europe, SS-20s also could readily reach Japan and South Korea.) The Alliance was determined not to repeat the “neutron bomb” episode. After lengthy consideration, NATO foreign and defense ministers in December 1979 adopted the “dual-track” decision on long-range theater nuclear forces: the United States would deploy 572 Pershing II and ground-launched cruise missiles in Europe while conducting negotiations with the Soviet Union on reducing and limiting intermediate-range nuclear forces (the United States and NATO adopted new terminology to cover the missile systems under negotiation).

The “dual-track” decision proved hugely controversial in Europe, generating massive public protests against the deployment of the U.S. missiles in the early 1980s. Although popular opposition generated considerable tensions within Europe, deployment began at the end of 1983, prompting the Soviets to break off negotiations. Washington and Moscow agreed to resume negotiations in 1985, which resulted in a 1987 treaty banning and eliminating all U.S. and Soviet intermediate-range nuclear force (INF) missiles worldwide.

EXTENDED DETERRENCE IN EAST ASIA

The U.S. extended deterrent applied not only to Europe. In the Pacific, it covered Japan, South Korea, Australia and, until the 1980s, New Zealand. The mutual defense treaty with South Korea was bolstered by the presence of U.S. troops and tactical nuclear weapons on the peninsula. When the Japanese government in 1967 formally adopted its three non-nuclear principles—not to possess, manufacture or allow nuclear weapons to be introduced onto Japanese territory—it was with the understanding that a reliable U.S. nuclear umbrella covered Japan. In 1982, the Japanese government stated publicly its view that the U.S. extended deterrent included the possibility of first use of nuclear weapons in response to an attack on Japan involving only conventional forces.⁸ For a time, the Japanese government quietly ignored the third of its non-nuclear principles,

turning a blind eye to the presence of U.S. nuclear weapons in Japan.

The U.S. desire to maintain the credibility of its extended deterrent in East Asia and the Western Pacific was driven not just by a desire to reassure allies of American commitment; it aimed also to discourage allies from seeking nuclear arms of their own. The Nixon administration's decision to withdraw one division from South Korea without prior consultations shook South Korean confidence, and Seoul started a nuclear weapons program in the early 1970s. Washington sought to end the program but was only able to do so as tensions on the peninsula relaxed in the 1980s. Tokyo periodically conducted quiet studies of the nuclear weapons option but in each case concluded that reliance on the U.S. nuclear umbrella was the preferable course. Australia briefly considered the nuclear option in the late 1960s before reaching a similar conclusion.

EXTENDED DETERRENCE IN THE MIDDLE EAST

During the Cold War, extended deterrence was also a factor in U.S. policy in the Middle East. Washington's principal interest was access to the region's vital oil supplies at reasonable prices. The United States sought Middle Eastern allies—in particular Saudi Arabia, Iran and Israel—who could help push back the Soviet Union and its regional proxies, in particular, Egypt, Syria and Iraq. Hence the need to extend a U.S. deterrent umbrella. During the October 1973 war between Israel, Egypt and Syria, the Nixon administration ostentatiously alerted American nuclear forces to signal Moscow that any Soviet attack on Israel would trigger an American military response. Following the Iranian revolution and Soviet invasion of Afghanistan in 1979, the Carter administration announced its “Carter Doctrine,” which stated that the United States would use force to prevent any power from conquering the oil fields of the Persian Gulf—extending American deterrence not just to American allies, but to a mortal enemy in Iran that not only did not want American guarantees but sought to rid the region of a U.S. military presence.

U.S. fears for the safety of its Middle Eastern allies (and their vital oil resources) changed shape with the end of the Cold War. Saddam's invasion of Kuwait fundamentally re-oriented America's perception of extended deterrence in the Middle East, as the United States and its regional allies perceived a lesser but far more immediate threat from Iraq and Iran, regional powers which vied for dominance in the Gulf.

Such fears prompted the George H. W. Bush administration to wage the Persian Gulf War of 1990-1991 to destroy Iraq's military power, after it invaded Kuwait and threatened the oilfields of Saudi Arabia. They also obliged the Clinton administration to proclaim the “dual containment” of Iraq and Iran. The George W. Bush administration had many motives for overthrowing Saddam's government in 2003, but one was surely its fear—shared widely by others—that the containment of Iraq was fracturing and that Saddam would be difficult to deter once he had rebuilt his military and his weapons of mass destruction (WMD) arsenal.⁹

REAGAN'S SEARCH FOR AN ESCAPE FROM MAD

Ronald Reagan's election in 1980 led to a reexamination of U.S. strategic nuclear forces. Concerned that the United States was lagging behind the Soviets, the Reagan administration revived the B-1 bomber cancelled by its predecessor and accelerated deployment of the new MX ICBM. In 1983, Reagan launched the Strategic Defense Initiative (SDI), which he hoped would ultimately end MAD by producing defenses capable of defeating a large-scale ballistic missile attack.

Serious negotiations on reducing strategic nuclear forces began in 1985. A 1986 summit between President Reagan and Soviet General Secretary Gorbachev almost produced agreement to eliminate all nuclear arms—a potential outcome that unnerved British Prime Minister Thatcher and other NATO leaders, who continued to value the deterrent role of nuclear weapons. The strategic arms negotiations continued for another five years, resulting in 1991

in the conclusion of the START I Treaty. It limited each side to no more than 6,000 warheads on 1,600 strategic nuclear delivery vehicles (ICBM launchers, SLBM launchers and heavy bombers).

While SDI yielded some advances in the area of missile defense, it fell far short of producing President Reagan's vision of an impenetrable shield that could protect the United States and its allies from ballistic missile attack. Nuclear deterrence remained central to the nuclear relationship between the United States and Soviet Union. Although relations between the United States and Russia today are very different from those of the Cold War, nuclear weapons continue to figure as an important element of that relationship.

The INF treaty, which banned land-based U.S. and Soviet INF missile systems, did not apply to sea-based systems. In parallel with development of the ground-launched cruise missile, the United States developed and deployed a naval variant: the sea-launched cruise missile (SLCM). The SLCM had both a nuclear and conventional variant, and nuclear-armed SLCMs—also known as Tomahawk Land Attack Missiles/Nuclear or TLAM/Ns—aboard U.S. Navy ships in the Pacific were seen as contributing to extended deterrence for countries such as Japan and South Korea.

THE COLD WAR'S END

As the Cold War drew to an end, both Washington and Moscow took steps to further reduce their nuclear forces beyond the cuts required by the START and INF treaties. The George H. W. Bush administration adopted a number of unilateral initiatives. These included removing all nuclear weapons from American submarines and surface ships (except for those on ballistic missile submarines) and removing to the United States all land-based tactical nuclear weapons, with the exception of a small number of bombs in Europe. Many of these weapons were slated for dismantlement. As a result of this policy, by mid-1992 all nonstrategic nuclear weapons had been withdrawn from bases in Korea and most from Europe. The U.S. Navy completed its removal of

nonstrategic weapons—including nuclear-armed SLCMs—in roughly the same time period.¹⁰ Given the collapse of the Soviet Union, few saw these U.S. moves as weakening the American extended deterrent, even when strong doubts emerged about whether Russia had implemented all of the unilateral steps that it had announced.

The Clinton administration announced in 1994 that U.S. ICBMs and SLBMs would no longer routinely target locations in Russia or any other country. This “detrargeting” policy was seen as a measure appropriate to improving U.S.-Russian relations, though reprogramming missiles with targets is a relatively rapid process. The START I Treaty entered into force at the end of 1994, with Russia, Belarus, Kazakhstan and Ukraine agreeing to implement the reductions and limitations agreed to by the Soviet Union. The latter three post-Soviet states also agreed to eliminate all strategic arms on their territories, a process that was completed by 2001.

The Clinton administration tried to bring into force the 1993 START II Treaty, which would have cut U.S. and Russian strategic warheads to no more than 3,000-3,500 and eliminated all ICBMs with multiple, independently-targetable reentry vehicles. The Senate ratified START II in 1996, but the Russian Duma repeatedly delayed ratification to protest concern over various U.S. actions. START II later became entangled with issues related to missile defense and never entered into force. The sides were unable to complete a START III agreement, which was to reduce the warhead limit to 2,000-2,500.

The George W. Bush administration's 2001 posture review introduced a number of changes to U.S. nuclear policy. It sketched out a new triad consisting of “offensive strike systems (both nuclear and non-nuclear); defenses (both active and passive); and a revitalized defense infrastructure.” The review termed a posture based on strategic deterrence of Russia inappropriate for the challenges of the 21st century and called for a range of nuclear and non-nuclear capabilities that could assure allies and friends; dissuade potential adversaries from pursuing

threatening weapons; deter potential adversaries; and if necessary defeat an attacker.¹¹ Coupled with the Bush administration's embrace of a policy of preventive conflict (which was mislabeled "preemptive"), many saw the new nuclear policy as placing greater emphasis on the use of nuclear weapons, including possible first use in a strike against weapons of mass destruction stockpiles in rogue states.

The Bush administration also left open the possibility of use of nuclear weapons in response to a chemical or biological weapons attack. Its 2002 National Strategy to Combat Weapons of Mass Destruction stated: "The United States will continue to make clear that it reserves the right to respond with overwhelming force—including through resort to all of our options—to the use of WMD against the United States, our forces abroad, and friends and allies."¹² According to the Arms Control Association, the classified version of the strategy was explicit, replacing "including through resort to all of our options" with "including potentially nuclear weapons."

The Bush administration concluded the Strategic Offensive Reductions Treaty (SORT) with Russia in 2002, limiting each side to no more than 1,700-2,200 strategic nuclear warheads—the number of strategic warheads called for by the Bush administration's 2001 posture review. The treaty, however, contained no counting rules or monitoring measures; essentially, it was unverifiable. President Bush in 2002 withdrew the United States from the 1972 Anti-Ballistic Missile (ABM) Treaty, which had for almost 30 years tightly constrained strategic missile defenses, and subsequently deployed a small number of ground-based interceptor missiles in Alaska and California designed to deal with rudimentary ICBM threats posed by North Korea or Iran.

Faced with the looming 2009 expiration of the START I Treaty, the Bush administration held discussions with Moscow in 2008 on the possibility of a successor. The sides differed over whether to cap the number of strategic nuclear delivery vehicles, missile defense and U.S. plans to put conventional warheads on strategic ballistic missiles, and the talks failed to produce a new agreement.

THE OBAMA APPROACH

The Obama administration assumed office in 2009 determined to "reset" relations with Russia and ready to return to a more traditional approach to strategic arms control, believing that arms control offered a means to enhance U.S. and allied security. Speaking in Prague in April, President Obama articulated the long-term goal of a world without nuclear weapons. He stated "the United States will take concrete steps towards a world without nuclear weapons. To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same."¹³ At the same time, he made clear that, until the day when all nuclear weapons were eliminated, maintaining a safe, secure and effective nuclear deterrent would remain critical to U.S. national security interests.

President Obama's Prague speech echoed themes raised by the "Gang of Four"—former Secretaries of State Kissinger and Shultz, former Secretary of Defense Perry and Senator Nunn—in their January 2007 Wall Street Journal op-ed calling for moving to a nuclear-free world. That sparked the launching of a "Global Zero" movement in 2008, which now numbers scores of former senior American, European, Russian and Asian officials among its supporters.

As mandated by Congress, the Obama administration in 2009 began preparation of a Nuclear Posture Review, the purpose of which was to "establish U.S. nuclear deterrence policy, strategy and force posture for the next five to ten years." Specifically, the review was tasked with assessing the role of U.S. nuclear forces, the requirements for a "safe, reliable and credible nuclear deterrence posture," the role of missile defense and conventional strike capabilities, the "levels and composition of the nuclear delivery systems" to implement U.S. strategy, and the requisite nuclear weapons stockpile.¹⁴ The Department of Defense had lead responsibility for preparation of the review, with heavy involvement by the White House, Department of State and Department of Energy.

In April 2009, Presidents Obama and Medvedev launched negotiations aimed at concluding a

START I follow-on treaty that would reduce strategic warheads and strategic nuclear delivery vehicles while also maintaining a verification and transparency regime. Meeting in Moscow in July, the presidents outlined the parameters for a new treaty, including limits of 1,500-1,675 strategic warheads and 500-1,100 strategic delivery vehicles, and provisions on counting rules, verification measures and the interrelationship between strategic offense and defense, among others.¹⁵

Although the negotiations failed to produce an agreement by the time START I expired on December 5, the sides made progress and, on April 8, 2010, Presidents Obama and Medvedev signed the New START Treaty. It will limit each side to 1550 deployed strategic warheads; 800 deployed and non-deployed ICBM and SLBM launchers and nuclear-capable heavy bombers; and 700 deployed ICBMs, SLBMs and nuclear-capable heavy bombers. The treaty notes the offense-defense interrelationship but does not specify limits on missile defenses other than a prohibition on emplacing missile defense interceptors in ICBM and SLBM launchers, which the United States does not plan to do. Obama administration officials have indicated their desire to pursue a new round of negotiations with Russia that would further reduce strategic nuclear weapons and address tactical (or non-strategic) nuclear weapons.

The Obama administration's new approach to nuclear weapons raised a number of questions. If the president sought to deemphasize the role of nuclear weapons in U.S. national security strategy, would he be prepared to change declaratory policy? Previous U.S. declaratory policy offered assurances of no use of nuclear weapons against certain states but retained, at least implicitly, the option of first use of nuclear weapons against other states and maintained a degree of ambiguity regarding the use of nuclear weapons in response to an attack with chemical or biological weapons. Some suggested that an explicit policy of "no first use" of nuclear weapons would advance President Obama's desire to reduce the role of such weapons and would be consistent with current international circumstances, while others proposed a statement that the "sole purpose" of U.S.

nuclear weapons would be to deter a nuclear attack. One question the administration had to consider was whether such policy shifts could be adopted in a way that maintained effective extended deterrence and did not undercut the reassurance of U.S. allies and partners.

At the same time, administration officials grappled with the importance of extended deterrence as they dealt with the challenges posed by the North Korean and Iranian nuclear weapons programs. In July 2009, Secretary of State Clinton suggested that, were Iran to acquire nuclear weapons, the United States might be prepared to extend a "defense umbrella" over neighboring states in the region. While she did not use the term "nuclear," many assumed that that was what she had in mind.¹⁶

Negative Security Assurances. The Nuclear Posture Review also examined what negative security assurances the United States might provide to non-nuclear weapons states. The United States since 1978 had provided as a matter of declaratory policy negative security assurances, a statement describing countries against which it would not use nuclear weapons. The language used by the Clinton administration in 1995:

"The United States reaffirms that it will not use nuclear weapons against non-nuclear-weapon states-parties to the Treaty on the Nonproliferation of Nuclear Weapons, except in the case of an invasion or any other attack on the United States, its territories, its armed forces or other troops, its allies, or on a state toward which it has a security commitment, carried out or sustained by such a non-nuclear weapon state in association or alliance with a nuclear-weapon state."¹⁷

Despite the language of the pledge, the United States maintained a degree of ambiguity regarding whether it might use nuclear weapons in response to an attack with other weapons of mass destruction—chemical or biological agents—even by a non-nuclear weapon state. In the run-up to the first Gulf

War in 1991, U.S. officials suggested that, were Iraqi forces to use chemical or biological weapons against coalition forces, the U.S. response might be nuclear. Secretaries of Defense Perry and Cohen during the Clinton administration both left open the possible use of nuclear weapons in response to a chemical or biological attack, a policy reaffirmed by the Bush administration.¹⁸

BROADENING THE CONCEPT OF DETERRENCE

The Obama administration also talks of broadening the concept of deterrence to include advanced conventional weapons and missile defense. Although deterrence traditionally has focused on the devastating threat of nuclear retaliation as the means to create risks and costs all out of proportion to the gains a potential attacker might hope to achieve, deterrence can be strengthened in other ways.

The increasing ability of precision-guided conventional munitions to strike distant targets raises the

prospect that they also can pose risks and significant costs to a potential aggressor. Missile defense, on the other hand, increases the prospect for denial, an often-overlooked part of deterrence. An effective missile defense system that could defeat an aggressor's ballistic missile strike could deny the aggressor the gains sought by frustrating the attack. (That said, U.S. missile defense efforts currently focus on dealing with small attacks by less sophisticated countries such as North Korea and Iran. Washington does not seek the capability to defeat a large attack that could be mounted by a country such as Russia, as that would be hugely expensive and would likely prompt a missile build-up by Russia.)

The Obama administration seeks to broaden the deterrence concept so that it does not rest solely on nuclear weapons. Improving conventional strike options and new missile defense capabilities can make increasing contributions to deterrence, both for protection of the American homeland and of U.S. allies and partners. The full implications of these developments for deterrence have yet to be fully thought through.

3. THE NUCLEAR POSTURE REVIEW'S CONCLUSIONS

U.S. DECLARATORY POLICY

The Nuclear Posture Review report released on April 6, 2010 focused on five key objectives: “preventing nuclear proliferation and nuclear terrorism; reducing the role of U.S. nuclear weapons in U.S. national security strategy; maintaining strategic deterrence and stability at lower nuclear force levels; strengthening regional deterrence and reassuring U.S. allies and partners; and sustaining a safe, secure and effective nuclear arsenal.”¹⁹ The report announced that the United States would give greater priority in its nuclear policy to nuclear terrorism and nuclear non-proliferation, as the threat of global nuclear conflict had become remote.

When the Nuclear Posture Review report was released, considerable attention focused on its conclusions on declaratory policy. The review stated that the United States would only consider use of nuclear weapons in “extreme circumstances” and that the “fundamental purpose” of U.S. nuclear weapons was to deter nuclear attack on the United States, its allies and partners. It set as an objective creating conditions under which the United States might later move to make deterrence of nuclear attack on the United States, its allies and partners the “sole purpose” of U.S. nuclear forces.

The Nuclear Posture Review made a more significant change with regard to U.S. negative security assurances. It stated “the United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation

obligations.”²⁰ This aligned U.S. declaratory policy to bolster compliance with the NPT, by withholding negative security assurances from those countries outside of—or not in compliance with their obligations under—the NPT. This reflected the review’s intent to put greater focus on nuclear outliers such as North Korea and Iran.

The Nuclear Posture Review also removed the ambiguity in prior U.S. policy regarding possible use of nuclear weapons in retaliation for an attack with chemical or biological arms. The review excluded a nuclear response to use of chemical or biological weapons by a non-nuclear weapons state, promising instead to pose the “prospect of a devastating conventional military response” to such an attack. It did, however, add a hedge regarding biological weapons, noting that the policy might be revisited in light of future biotechnology developments.

MAINTAINING EFFECTIVE NUCLEAR FORCES

Much of the Nuclear Posture Review dealt with the future of U.S. strategic and tactical nuclear forces. While leaving room for further reductions below the levels in the New START Treaty, the review reaffirmed the value of maintaining a strategic triad of ICBMs (armed with single warheads), SLBMs and heavy bombers equipped for nuclear armaments. The review announced programs to extend the life of certain U.S. nuclear weapons and underscored the importance of a robust nuclear weapons infrastructure while eschewing a new nuclear weapon or new nuclear weapon capabilities. It cited the importance

of continuing to develop non-nuclear capabilities—such as precision conventional strike and missile defense—that might take some of the deterrence burden from nuclear weapons.

The review contained a number of recommendations related to the U.S. ability to extend deterrence to America’s regional allies. It said the United States would maintain the capability to forward deploy both heavy bombers and fighter-bombers, such as the F-16 and F-35, to demonstrate the extended deterrent. The B-61 bomb will become the sole tactical weapon in the inventory, as the review stated that the United States would retire the TLAM/N cruise missiles that have been in storage since the early 1990s. The review said that United States would undertake full-scope life extension of the B-61.

The review placed great emphasis on strengthening the U.S. nuclear weapons complex so that it could ensure a safe and reliable nuclear deterrent without having to resort to nuclear testing. It stated that U.S. policy would be not to develop new nuclear

warheads but to rely on life extension programs based on previously tested warhead designs. Life extension programs will consider “refurbishment of existing warheads, reuse of nuclear components from different warheads, and replacement of nuclear components,” with a strong preference for refurbishment or reuse.²¹ The Obama administration said that life extension programs would not add new nuclear capabilities or support new military missions.

Finally, the review noted the importance of working with allies to maintain the credibility of extended deterrence. It called for close consultations to address questions of ensuring that the U.S. extended deterrent remained credible and effective. The review stated that questions related to NATO nuclear policy and NATO’s nuclear force posture would be taken up in Alliance channels. Indeed, NATO foreign ministers discussed this question and the contribution that NATO might make to nuclear reductions at a late April meeting, and that discussion will continue in NATO channels.

4. DETERRING NUCLEAR ATTACK ON THE UNITED STATES AND DECLARATORY POLICY

POST-START U.S. STRATEGIC FORCES

The Nuclear Posture Review announced changes to U.S. declaratory policy that affect extended deterrence more than central deterrence of attack on the United States. The review stated that the United States would maintain effective nuclear forces to back its policy.

The New START Treaty limits each side to no more than 1,550 deployed strategic warheads; 800 deployed and non-deployed ICBM and SLBM launchers and nuclear-capable heavy bombers; and 700 deployed ICBMs, SLBMs and nuclear-capable heavy bombers. Although the treaty will require a reduction in U.S. nuclear forces, the United States will still be able to deploy a highly survivable, robust strategic deterrent. Those forces will be more than sufficient to make clear to any other nuclear power that a nuclear attack on the United States would result in a devastating response.

New START limits will require relatively minor changes to the current U.S. force structure, i.e., the number of strategic ballistic missiles and heavy bombers. The White House said in May that, under the treaty, the United States would deploy up to 420 Minuteman III ICBMs, up to 60 nuclear-capable heavy bombers, and 14 ballistic missile submarines, each with 20 launchers (reduced from 24 launchers). The U.S. Navy would deploy 240 Trident D-5 SLBMs (two Trident submarines typically are in long-term maintenance and have no SLBMs on board). The United States plans to reduce to the new treaty's warhead limit primarily by "downloading" ballistic

missiles, that is, by removing warheads from missiles. All Minuteman III ICBMs, which can carry three warheads, will be deployed with a single warhead, while most Trident II D-5 SLBMs will be downloaded to carry significantly fewer than their maximum of eight warheads.

The United States Navy thus will be able to maintain its present force of 14 Trident ballistic missile submarines (four of the original 18 Trident submarines have been modified to carry canisters with conventionally-armed cruise missiles in place of SLBMs; these launchers will not be counted by the New START Treaty). The U.S. Air Force will maintain most of its current 450 Minuteman III ICBMs. While the number of strategic bombers with nuclear roles will be reduced, a number will be converted to conventional-only roles and will not be counted by New START.

This means that a potential attacker who would hope to disarm the post-New START U.S. strategic nuclear force would need to attack roughly the same number of targets as today. Realistically, the only country that has the forces to even contemplate such a strike is Russia, which will be limited by treaty to the same number of warheads as the United States (no other nuclear power deploys more than 300 strategic and intermediate-range nuclear warheads). The Russians can not now, and under the new treaty could not, launch such an attack with any confidence of successfully disarming the United States.

The Minuteman IIIs sit in dispersed, hardened silos, and a conservative attack scenario would postulate

using two warheads against each silo—not a good exchange ratio when the result would be the destruction of only one U.S. warhead per silo. There is no reason to suspect that Trident submarines at sea will lose the invulnerability that they possess today. The U.S. strategic ballistic missile force will thus remain highly survivable. As for the bomber force, which no longer stands alert, it could be placed on alert in a crisis and, if necessary, could even resume the Cold War practice of airborne patrols, which would reduce the vulnerability of the aircraft to a first strike.

Even after absorbing a first strike, residual U.S. strategic forces would remain capable of delivering hundreds of warheads against an attacker. The post-START strategic force will be able to provide robust deterrence against an attack on the United States and will contribute significantly to the extended deterrent covering U.S. allies.

One month following the release of the Nuclear Posture Review, the Department of Defense announced that, as of September 2009, the United States had 5,113 weapons in its nuclear stockpile. This included strategic and tactical nuclear weapons, both deployed and in storage. It did not include retired weapons awaiting dismantlement.

DECLARATORY POLICY

One aim of the Nuclear Posture Review was to implement President Obama’s intent to reduce the role of nuclear weapons in U.S. national security strategy while not weakening the credibility of the extended deterrent. As Paul Nitze first argued in 1956, there is an important difference between declaratory policy—what a state says it will do with its nuclear weapons, with a view to affecting the calculations of other states—and its action policy—how a state would actually employ its nuclear weapons, i.e., its war plans.²² Whatever the declaratory policy of the Obama administration, a potential aggressor would understand that the probability of a nuclear response to a nuclear attack on the United States would be extremely credible, if not certain, and that the United States has the forces to carry out such a response. The more challenging question is extended deterrence.

Some suggested the administration adopt a policy of “no first use” of nuclear weapons, i.e., declare that it would not under any circumstances use nuclear weapons first. Proponents argued that this would implement President Obama’s desire to reduce the role of nuclear weapons and send a dramatic signal of the U.S. commitment to move away from nuclear weapons. Moreover, proponents argued, it was extremely difficult to envisage conditions under which the United States would resort first to nuclear weapons, especially given the impressive capabilities of U.S. conventional military forces.

“No first use” reportedly was discarded early in the review process. A major question was whether such a declaratory policy would be credible. Although the Soviet Union for years articulated a “no first use” policy, few believed it, and documents that emerged following the Cold War indicate that Moscow was in fact prepared to use nuclear weapons first. The categorical nature of such a statement was questioned: could future circumstances arise in which the United States might believe it necessary to again consider first use of nuclear arms? Would the United States want to retain the option of a preemptive strike with nuclear weapons against another country’s nuclear forces if it had compelling evidence that that country was about to launch those weapons? Finally, some allies were nervous that a “no first use” policy would weaken the credibility of extended deterrence.

The 2009 report on America’s Strategic Posture issued by the Congressional Committee on the Strategic Posture of the United States, led by former Secretaries of Defense Perry and Schlesinger, discussed declaratory policy and how it should be made as effective as possible. The report argued against adopting a “no first use” policy, citing concerns by some U.S. allies and the contribution of nuclear weapons to deterring a biological weapons attack, but did not advocate a specific policy.²³ Likewise, the task force on U.S. Nuclear Weapons Policy led by former Secretary Perry and former National Security Advisor Scowcroft called for “reaffirming and maintaining U.S. deterrence commitments to allies” but did not provide a consensus recommendation on declaratory policy.²⁴

A nuanced but still significant move would have been for the Obama administration to state that the “sole purpose” of U.S. nuclear weapons is to deter nuclear attack on the United States, its allies and partners, and that U.S. nuclear weapons would only be used in response to such an attack. Several leading non-governmental arms control experts sent President Obama a February 1 letter entitled “The Importance of Transforming U.S. Nuclear Weapons Policy.” The authors argued, “It is inconceivable today that you or any other president would conclude the first use of nuclear weapons is in our national interest, especially in light of our conventional military power.” The letter urged that the Nuclear Posture Review “narrow the purpose of nuclear weapons to deterring nuclear attacks on the United States and our allies.”²⁵ Such a statement would not be quite as categorical as a “no first use” policy, though it would be seen by many as virtually the same.

Skeptics of the formulation questioned whether it would yield much of value in terms of other countries’ policies. In particular, they doubted that the formulation would increase the prospects for a successful NPT review conference outcome. They also noted that the “sole purpose” formulation might undermine extended deterrence by limiting the cases in which the United States would use nuclear weapons in support of an ally.

The Nuclear Posture Review stated that the “fundamental purpose” of nuclear weapons is to deter nuclear attack on the United States, its allies and partners while setting the goal of creating conditions that would allow subsequent adoption of a “sole purpose” policy. Administration officials described this—coupled with the new negative security assurances and renunciation of nuclear retaliation for a chemical or biological weapons attack by a non-nuclear weapons state in compliance with its NPT obligations—as narrowing the role of nuclear weapons in U.S. policy, consistent with the president’s expressed desire. But the “fundamental purpose” formulation left some ambiguity on other purposes. Critics argued that that ambiguity detracted from the value of the formulation in narrowing the role of nuclear weapons.

The administration’s major change came with its negative security assurances (NSAs) formulation. The Nuclear Posture Review replaced the 1978 formulation—worded primarily to exclude from the assurances Warsaw Pact members allied with the Soviet Union and North Korea, which had an alliance with the Soviet Union and, at least formally, still maintains an alliance with China—with a formulation linking the assurances to non-nuclear weapons states party to and in full compliance with their obligations under the NPT.

The administration saw such a policy on negative security assurances as offering several advantages. First, to the extent that such assurances are seen as affecting actual employment policy, they could provide additional incentives for states to join the NPT and remain in compliance with its requirements. (Under previous U.S. policy, Iran had a negative security assurance against U.S. nuclear weapons use; under the new policy, it does not.) Second, such a change in policy, announced less than one month before the beginning of the May NPT review conference could be portrayed as a significant policy step aimed at bolstering the NPT regime. Third, the administration hoped that such a change in policy, coupled with the signing of New START, could strengthen the hand of American negotiators at the review conference. Finally, the old NSA formulation made little sense; the Warsaw Pact members that it was designed to exclude from the assurances are all now in NATO.

The review also eliminated the “calculated ambiguity” regarding a U.S. response to a chemical or biological weapons attack by a non-nuclear weapons state in compliance with the NPT. This could be depicted as narrowing the purpose of U.S. nuclear weapons. The administration apparently decided that such advantages overrode other concerns: critics fear that eliminating the ambiguity might weaken deterrence of a country such as Syria, which is a non-nuclear weapons state party to the NPT that is believed to have chemical and/or biological weapons (CW or BW) programs. Syria, or some other non-nuclear weapons state in full compliance with its NPT obligations could use CW or BW against U.S.

forces or an American ally but would be exempted from a U.S. nuclear response. Critics of the policy shift expressed concern that the new policy could weaken deterrence of a CW or BW attack by a non-nuclear weapons state.

5. EXTENDED DETERRENCE AND NATO EUROPE

NATO'S CURRENT POSTURE AND POLICY

The United States has long extended a nuclear umbrella over NATO. This has been manifested in the deployment of U.S. tactical nuclear weapons in Europe, backed up by the commitment of U.S. strategic nuclear forces, as well as by NATO nuclear policy. Any proposals to change NATO policy or the deployment of U.S. tactical nuclear weapons in Europe must be weighed in the context of what effect they might have on the U.S. extended deterrent in Europe.

Allied sensitivities reportedly factored heavily into administration calculations of the Nuclear Posture Review. The review, moreover, deferred the questions of NATO nuclear policy and nuclear force posture to an Alliance discussion that was beginning in the context of developing a new strategic concept, which is supposed to be ready for the November NATO summit.

Several issues arise for the Alliance. Would a change in NATO policy or in the deployment of U.S. nuclear weapons weaken the extended deterrent's effect on Russia or other threats, such as Iran? Would it weaken the extended deterrent in the eyes of some NATO allies? Allies are of different views, reflecting in part differences among the allies over whether Russia today poses a threat to NATO. What would be the political ramifications if allies lost confidence in the broader U.S. and NATO security guarantee? Such a policy change could also affect proliferation incentives. The commitment of U.S. nuclear weapons to NATO has contributed not only to deterrence

of Russia but has reduced the incentives of NATO members to acquire nuclear arms of their own. This question is sometimes raised with regard to Turkey: would changes in NATO policy or U.S. nuclear deployments in Europe degrade extended deterrence against a future Iranian nuclear weapon in Turkish eyes and give Ankara incentives to develop its own nuclear weapons capability?

Article V of the NATO treaty says NATO members agree “that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all” and that each will assist the member(s) attacked “taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.” Allies envisage a variety of means to carry out Article V, including direct defense with conventional forces. The U.S. “nuclear umbrella” was intended to extend the ultimate guarantee to NATO allies—that of a U.S. nuclear response to aggression.

NATO traditionally prefers to avoid major public discussions about nuclear policy. This is understandable, as public debates in the past, such as those over MLF in the early 1960s, the possible deployment to Europe of the neutron bomb in 1977-78, and the implementation of the 1979 “dual-track” decision, provoked huge and agonized public controversies. It thus is little surprise that the Alliance's approach to nuclear weapons has amounted largely to one of letting sleeping dogs lie. As one National Security Council staff member privately observed in 1997, it does not

matter what the United States wants to do with its nuclear weapons in Europe—increase them, modernize them, move them around, reduce them, or eliminate them—someone in Europe will be very unhappy.

The United States since 1991 reportedly has reduced the number of its nuclear weapons in Europe and consolidated them at a handful of bases. This has taken place with little public fanfare. Compared to 1971, NATO has reduced the number of nuclear weapons types (other than U.S., British and French strategic nuclear forces) from eleven to one—U.S. nuclear bombs for delivery by dual-capable aircraft. In October 1991 NATO decided to reduce the number of nuclear weapons by 85 percent and made corresponding reductions in the number of nuclear weapons storage sites (while describing these relative reductions, NATO does not disclose officially the actual number or locations of nuclear weapons or nuclear weapons storage sites currently in Europe). In the aftermath of the Cold War, NATO also reduced the readiness levels of its dual-capable aircraft; none now stand on quick-reaction alert, and their readiness is measured in terms of months.²⁶ It is estimated that the U.S. Air Force currently maintains some 200 B-61 nuclear bombs for use by U.S. or NATO dual-capable aircraft; these are believed to be deployed at air bases in Belgium, Germany, Italy, the Netherlands and Turkey.²⁷ The Nuclear Posture Review calls for the United States to maintain the capability to forward deploy U.S. nuclear bombs on fighter-bombers and heavy bombers, and stated that the B-61 bombs would undergo full-scope life extension programs.

The strategic concept adopted by NATO leaders at their April 1999 summit devoted three paragraphs—entitled “characteristics of nuclear forces” at the end of the document—to the issue of NATO nuclear forces and policy. That section stressed that the fundamental purpose of nuclear weapons was political: “to preserve peace and prevent coercion and any kind of war.” The concept went on to state that those forces had “to be perceived as a credible and effective element of the allies’ strategy in preventing war” and “the circumstances in which any use of nuclear weapons might have to be

contemplated by them [the allies] are therefore extremely remote.” It noted that reductions had been made in sub-strategic forces but that “NATO will maintain, at the minimum level consistent with the prevailing security environment, adequate sub-strategic forces based in Europe.”²⁸

The 1999 strategic concept did not address the circumstances under which NATO might decide to use nuclear weapons or state whether there had been any change from previous policy. NATO stated that the “fundamental purpose of the nuclear forces that remain is political: to preserve peace and prevent coercion” and that NATO “does not follow either a nuclear first-use or no-first-use policy. The Alliance does not determine in advance how it would react to aggression. It leaves this question open.”²⁹

The Alliance’s other notable pronouncement on nuclear posture came in the context of the launch of a NATO-Russia relationship in 1997. As part of NATO’s effort to assure Moscow that enlargement of the Alliance would not threaten Russian security, the allies stated that they had “no intention, no plan and no reason to deploy nuclear weapons on the territory of new [NATO] members, nor any need to change any aspect of NATO’s nuclear posture or nuclear policy—and do not foresee any future need to do so.”³⁰

The administration’s decision to defer questions related to NATO nuclear policy and the issue of U.S. nuclear weapons in Europe to discussion by NATO reflects the view that the U.S. government cannot take decisions on such questions unilaterally; it can do so only as a result of consultations with the Alliance. It also reflected some concern that changing the policy might have adverse consequences for extended nuclear deterrence, particularly in Central Europe in the aftermath of the 2008 Russia-Georgia conflict and the September 2009 reconfiguration of missile defense plans for Europe. While it is proper for U.S. officials to leave this discussion to NATO channels, sooner or later, the U.S. government will need to articulate its policy view in this discussion. Many allies may be waiting to hear from Washington before they decide their own positions.

AN EMERGING PUBLIC DEBATE

The European public has over the past 15 years been relatively quiescent on the issues of NATO nuclear policy and U.S. nuclear weapons in Europe. To the extent that there has been a debate, it has taken place among government officials and the foreign policy elite. That said, there is little reason to expect that a NATO decision to adopt a policy of “no first use” or “sole purpose” and/or a decision to draw down U.S. nuclear weapons in Europe would be anything but popular with most European publics.

A public discussion has begun to emerge, stirred in part by the broader discussion of nuclear disarmament prospects. In January 2009, four elder German statesmen—Helmut Schmidt, Richard von Weizsacker, Egon Bahr and Hans-Dietrich Genscher—issued a statement calling for a nuclear-free world, for a treaty among the nuclear weapon states on “no first use” of nuclear weapons, and for the withdrawal of U.S. nuclear arms from Germany.³¹ German Foreign Minister Westerwelle, just after being designated to his new position in October 2009, told his Free Democratic Party that “we will take President Obama at his word and enter talks with our allies so that the last of the nuclear weapons stationed in Germany, relics of the Cold War, can finally be removed ... Germany must be free of nuclear weapons.”³² This position was made part of the coalition agreement between Westerwelle and Chancellor Merkel.

Many other European statesmen have signed on to the “Global Zero” movement. Four former Dutch ministers—Ruud Lubbers, Max von der Stoel, Hans van Mierlo and Frits Korthals Altes—called in December 2009 for the Netherlands to support President Obama’s goal of a world free of nuclear weapons and to seek the withdrawal of U.S. nuclear arms from non-nuclear weapon NATO member states.³³

The debate gathered steam in February 2010. A paper authored by former NATO Secretary General George Robertson, Franklin Miller and Kori Schake rebuked the Germans for being unwilling to share the burden while enjoying the benefits of the U.S. nuclear umbrella. The paper argued that the German

position could leave other countries hosting U.S. nuclear weapons exposed, give Turkey new reasons for concern about a nuclear Iran, and increase the worries of Central European NATO members already lacking confidence in NATO’s Article V security guarantee.³⁴

The paper prompted quick rebuttals. Wolfgang Ischinger and Ulrich Weisser criticized the authors for holding on “to the Cold War perception of Russia as a potential aggressor and not as a strategic partner with whom we share interests.” They favored U.S.-Russian negotiations aimed at eliminating U.S. and Russian tactical nuclear weapons or achieving their withdrawal to centralized storage sites on national territory.³⁵ Another analysis took issue with the Robertson, et al paper’s arguments, pointing out that not only was Germany seeking change, but that “parliaments in Belgium and Norway also advocate changes to NATO’s nuclear posture, and the Dutch government is also under pressure to end nuclear deployments.”³⁶

Whether NATO governments want it or not, a public debate is starting to emerge on nuclear questions. There is a good possibility that it will grow louder. One challenge for political leaders on both sides of the Atlantic will be to manage the debate in a way so that it does not undermine good security policy.

There are several reasons for now considering a change in NATO’s nuclear policy and posture. First, as he has made clear, President Obama desires to reduce the role of nuclear weapons. One way to signal such a shift and a narrowing of the role of nuclear weapons would be to change NATO declaratory policy in some way, following the changes in U.S. policy announced by the Nuclear Posture Review.

Second, the decline in Russian conventional force capabilities raises the questions of whether U.S. nuclear weapons in Europe have critical military value any longer and whether NATO needs to retain the option of use of nuclear weapons in response to a conventional attack. Soviet conventional superiority was a significant factor in shaping NATO’s nuclear policy during the Cold War. The capabilities of

Russian conventional forces, however, are dramatically less than they were 20 years ago. A Russian military attack against a NATO member state is extremely implausible, but, were it to happen, senior U.S. military commanders believe NATO could successfully defend itself using conventional forces. U.S. military commanders, and a number of allies, see U.S. nuclear weapons in Europe as no longer having military value; their role since the end of the Cold War is increasingly seen solely in political terms. Could U.S. strategic nuclear forces not play that political role?

Third, as noted above, interest in Europe in changing NATO's nuclear policy and eliminating nuclear weapons in Europe is growing, particularly in Germany but also in other countries, including Belgium, the Netherlands and Norway.

Proponents of changing the policy and removing U.S. nuclear weapons from Europe offer other arguments as well to make the point that today NATO has little reason to maintain U.S. nuclear arms on the territory of Alliance members: Russia has become a partner of NATO. NATO allies are fully committed to the NPT and have shown little interest in acquiring their own nuclear weapons (one reason for giving allies access to U.S. tactical nuclear weapons under dual-key arrangements was to forestall their desire to get their own nuclear arms). Some argued that NATO had an opportunity to reinforce its collective commitment to non-proliferation in the run-up to the NPT.³⁷

At their April 2009 summit meeting, NATO leaders tasked Alliance officials with preparation of a new strategic concept to guide NATO policy and planning looking out over the next ten years. This is due by the November 2010 summit and will replace the 1999 concept.

The changed nature of security relations within Europe would seem to open the possibility for consideration of a change in NATO nuclear policy, and there are solid arguments for doing so though, as noted below, there are valid counterarguments as well. The issue is complex and potentially controversial.

Allies hold strong views on these questions. It is time nevertheless for NATO to examine its nuclear policy and posture, even if only to reaffirm that the current policy and posture remain appropriate.

NATO POLICY AND THE DECLINE OF RUSSIAN CONVENTIONAL FORCES

NATO in the late 1960s adopted a “flexible response” policy that envisaged deterrence by denial—the ability to defeat a Warsaw Pact with conventional forces—as well as the possibility of first use of nuclear weapons in light of large Soviet and Warsaw Pact numerical advantages. Many analysts and officials questioned whether NATO could successfully defeat a conventional attack from the east. They saw a strong possibility that, in the event of large-scale conflict, NATO would have to resort to nuclear weapons.

Indeed, the Warsaw Pact numerical advantages in conventional forces were daunting. For example, a 1973 analysis showed NATO countries with 8,100 main battle tanks facing 21,200 maintained by the Warsaw Pact, while Warsaw Pact tactical aircraft roughly doubled those of NATO: 5,110 vs. 2,850.³⁸ The International Institute for Strategic Studies in 1985 gave the Warsaw Pact a 2.59 to one numerical advantage in main battle tanks, 3.24 to one in artillery pieces and multiple rocket launchers, and advantages ranging from 1.18-3.97 to one in different types of tactical aircraft.³⁹ While individual NATO tanks or aircraft were often qualitatively superior to their Warsaw Pact counterparts, NATO commanders did not consider the qualitative advantages sufficient to offset the Pact's numerical strength. Moreover, with Soviet divisions deployed in East Germany and Czechoslovakia, fears about a quick drive to the English Channel seemed very real.

Faced with such conventional disadvantages, NATO policy embraced the possibility of first use of nuclear weapons. The NATO Military Committee in 1968 adopted a flexible response policy which, in the event of a Soviet/Warsaw Pact attack, envisaged the possibility of deliberate escalation, including “(2) use of nuclear defense and denial weapons;

(3) demonstrative use of nuclear weapons; (4) selective nuclear strikes on interdiction targets; and (5) selective nuclear strikes against other suitable military targets.”⁴⁰ Alliance exercises into the 1980s included scenarios for the first use of nuclear weapons at the point when Warsaw Pact conventional forces were on the verge of defeating NATO forces.

The Warsaw Pact and Soviet Union are no more, and Russian conventional forces no longer pose the military threat that they did during the Cold War. Following the collapse of the Soviet Union, the Russian military budget fell precipitously during the 1990s, and the Russian army received virtually no new equipment. In Russia’s last data declaration (January 2007) before it “suspended” its observance of the Conventional Armed Forces in Europe (CFE) Treaty, Russia said it had 5,063 main battle tanks in the CFE area of application in Europe; NATO countries in contrast declared 12,486 tanks in holdings in the CFE area as of January 2009.⁴¹ And, with the exception of the Kaliningrad exclave, Russian borders are far from Central Europe (though not from the Baltic states).

Above and beyond the declining numbers of men and equipment, the Russian military’s performance in the two Chechen conflicts and the brief 2008 war with Georgia revealed significant shortcomings. The Russian government has announced several attempts aimed at reforming the military since the end of the Soviet Union. The early attempts achieved little, while the most recent attempt, launched in 2009, remains a work in progress. Despite talk of the need to professionalize the army, conscripts make up the bulk of the enlisted force, and they normally serve only one year of duty.

Russian government finances improved after 2000, particularly with the increase in oil and natural gas prices from 2003, and the Russian defense budget has increased. The increases have been modest relative to the aging state of most Russian army equipment. While new equipment is now being purchased, the most optimistic Russian estimates suggest that the army’s equipment will not be fully updated until 2020. The Russian army faces another

daunting challenge: Russia has been in a state of demographic freefall since 1991, and this is already showing in a decline in the number of males turning draft age.

Given the Russian army’s current state of disrepair, many Western analysts no longer regard it as posing a serious conventional threat to NATO, at least not a threat that would require nuclear weapons to defeat. Senior U.S. military leaders no longer see a military requirement for U.S. nuclear weapons in Europe. One senior U.S. officer attached to NATO’s Supreme Headquarters said that U.S. tactical nuclear weapons in Europe had no real military utility and that NATO could handle any Russian conventional attack with its conventional forces; he said this included the Baltic states, though they are the most exposed of NATO members. The main rationale for maintaining the weapons in Europe that he saw was for bargaining with Russia on tactical nuclear arms reductions. A second senior U.S. officer largely seconded these comments, noting that the only rationale for now keeping U.S. nuclear weapons in Europe was political.⁴² This view is not far from that of NATO’s 1999 strategic concept, which termed the fundamental purpose of NATO nuclear weapons to be political. Of course, the political importance of these weapons should not be understated.

RUSSIA AND TACTICAL NUCLEAR WEAPONS

As Russian conventional forces have declined over the past 15 years, the Russian military has placed increasing emphasis on the importance of tactical nuclear weapons. Moscow abandoned its “no first use” policy and adopted a doctrine that allowed for the possible first use of nuclear weapons, including in a regional conventional conflict. Russia’s new policy in many ways is like NATO’s flexible response policy, given Russian conventional force disadvantages.

Russia released a new and long-anticipated military doctrine in February 2010. The doctrine provides that Russia may resort to use of nuclear weapons first in the event that a regional or large-scale war degenerates to a situation “of grave danger to the

very existence of the Russian state.” The language set a higher bar for first use than the 2000 version and was more modest regarding nuclear use than pronouncements by senior Russian officials, such as Security Council Secretary Patrushev, had suggested it would be in 2009. Some of those comments had suggested that Moscow would adopt a robust policy envisaging early use of nuclear weapons in a broader variety of circumstances. The Russian military exercise “Zapad 2009” seemed to underscore this point, concluding with simulated nuclear strikes.

While Russia has now clarified its declaratory policy with the release of its doctrine, questions remain about Russian action policy. The public doctrine was reportedly approved along with a classified strategy document, the particulars and prescriptions of which are unknown.

THE VIEWS OF NATO ALLIES

Would changes in NATO nuclear policy or posture affect the U.S. extended deterrent? Most allies today see U.S. tactical nuclear weapons as being of political rather than military significance, but their views on NATO declaratory policy and the need for U.S. nuclear weapons in Europe differ significantly. Differences among allies on these questions reflect broader differences over the nature of the threat, if any, posed to NATO by Russia and weakened confidence on the part of some allies in Article V’s guarantee. Until these larger issues are resolved, it may prove difficult for NATO to come to a common view on nuclear questions.

At this point, explicit support among NATO allies for moving to a “no first use” policy appears to be relatively limited, while Central European allies vociferously oppose such a change. Many of those who may lean toward a change in policy are sensitive to Central European concerns and do not want to get too far ahead of a NATO discussion on this question. As for maintaining U.S. nuclear weapons in Europe, some allies do not see their presence on the continent as necessary for extended deterrence, while others in Central Europe feel strongly that at least some U.S. weapons should remain on European

soil. Support has grown, however, for a NATO reexamination of nuclear issues and for considering how NATO members might contribute to nuclear disarmament and reducing the role of nuclear weapons. On February 26, the foreign ministers of Belgium, Germany, Luxembourg, the Netherlands and Norway wrote NATO Secretary General Rasmussen to call for the issue of NATO nuclear policy to be on the agenda when NATO foreign ministers met on April 22-23 in Tallinn. Secretary of State Clinton told allied foreign ministers that Washington did not oppose reducing nuclear weapons in Europe, but she linked it to Russian actions. She suggested that Russian steps could include reducing Russian tactical nuclear weapons, greater transparency, and relocating weapons away from Russian borders with NATO members. This discussion on nuclear issues will continue in the development of the strategic concept and beyond.

Allies currently hold a range of views. German Foreign Minister Westerwelle would like to move towards a nuclear-free world and, in the short term, a nuclear-free Germany. Although Chancellor Merkel opposed this in the past, the coalition agreement concluded in autumn 2009 incorporates this point. The German government, however, does not appear to be in any rush and has taken no position on whether there should be a change in NATO’s declaratory policy. Berlin believes that the issue should be taken up in NATO channels.

The German coalition agreement’s desire to see nuclear weapons withdrawn from Germany and Europe is supported today by most of the political spectrum in Germany, with the exception of a part of the conservative bloc. Berlin believes that this issue also should be decided in the NATO context. It is nevertheless the view of the German government that U.S. extended deterrence does not require the presence of U.S. tactical nuclear weapons in Europe.⁴³ Moreover, the German air force already appears to have decided the issue. It plans to replace its Tornado aircraft in the middle of the decade with Eurofighters that will not be wired for nuclear weapons, as some Tornados were. The German air force thus will lose its nuclear capability, which would call

into question the rationale for having B-61 bombs in Germany designated for use by the German air force.

France, which along with Britain maintains its own nuclear force, has traditionally taken a robust position on nuclear deterrence. President Sarkozy in 2008 expressed the results of a French government policy review when he stated “our nuclear deterrence protects us from any aggression against our vital interests emanating from a state ... All those who would threaten our vital interests would expose themselves to severe retaliation by France ... In order for deterrence to be credible, the Head of State must have a wide range of options to face threats.”⁴⁴

The French government believes that not drawing a nuclear vs. non-nuclear distinction and maintaining ambiguity regarding its “vital interests” and the nature of the French response to aggression enhance the deterrent value of its nuclear weapons against the full spectrum of possible threats. While taking a robust position on its own deterrent, France takes no position on U.S. extended deterrence policy and, since it does not participate in NATO’s Nuclear Planning Group or High Level Group, does not have a say in Alliance nuclear policy. The French government, however, would oppose NATO adoption or a move toward a “no first use” policy, believing it could weaken the Alliance’s deterrent and would not be seen as credible. As for the presence of U.S. nuclear weapons in Europe, the French government again takes no policy position, but at least some French officials take the analytical view that there is no pressing military requirement for those weapons.⁴⁵

There has been some discussion of “no first use” within the Italian government, but Rome does not want to get ahead of NATO on this question. Italy’s view on the need for nuclear weapons in Europe to deter Russia is shaped in part by the fact that Rome does not regard Russia as a threat but instead sees potential for true cooperation with Moscow. One possibility, in Italian eyes, would be for NATO to take up the question of “no first use” with Russia in the NATO-Russia Council. The Italian government

hopes that NATO’s new strategic concept will think “outside the box” on these nuclear questions.⁴⁶

The Dutch government has adopted a position supporting a nuclear-free world, and Dutch Foreign Minister Verhagen in January called upon NATO members to examine how NATO could contribute to disarmament and non-proliferation. He told a Rotterdam audience on March 16 that “NATO, too, should shoulder its own responsibilities with regard to nuclear disarmament.” While noting the need to take account of the sensitivities of new NATO members, Verhagen said “Would it be possible for NATO to retain its nuclear mission without the presence of American nuclear weapons on its soil? I believe it would. In any case, it is an option that merits serious consideration.”⁴⁷

While not wanting to take a unilateral position on NATO nuclear questions and awaiting the results of the U.S. Nuclear Posture Review, the Dutch government hoped the Alliance will be able to do something in the nuclear area prior to the beginning of the NPT review conference. Given plans to phase out its dual-capable F-16s around 2020, the Netherlands will face decisions on its successor. The first issue to be decided is whether the Dutch will procure the Joint Strike Fighter (JSF) to replace its F-16s. If so, it then must decide whether to order JSFs with the wiring for nuclear weapons.⁴⁸

The British government believes that nuclear deterrence must remain an overall part of NATO policy, including extended deterrence, and its strategic nuclear forces will remain available to NATO. While London remains open-minded on how deterrence can be maintained over the longer term, it attaches importance to nuclear burden-sharing. The British believe also that deterrence does not need to rest solely on tactical nuclear weapons based in Europe: new capabilities, such as missile defense and precision strike with conventional arms, can take up some of the burden. The British see one of the challenges of the NATO debate on nuclear deterrence as reassuring the Central European states without leaving the whole nuclear burden (i.e., basing tactical nuclear weapons) on Western European members of the Alliance.⁴⁹

The German, French, Italian and Dutch views reflect relatively benign assessments of the possible Russian threat. (In early 2010, France was even negotiating with Russia on the sale of a Mistral helicopter carrier.) In Central Europe, nearer to Russia, the assessments are less benign and the reluctance to tamper with NATO nuclear policy and posture significantly greater.

The Polish government continues to worry about Russian intentions and, particularly in the aftermath of the Russia-Georgia conflict, the possibility of Russian aggression against NATO member states. The Poles agree that Russian conventional capabilities have declined but believe that NATO conventional capabilities in Europe have atrophied since the end of the Cold War, so NATO cannot be confident in its ability to respond with just conventional forces. Warsaw worries that a conventional response could require a lengthy reaction time, particularly as NATO has little infrastructure on the territories of new member states. The Polish view is shaped by the lack of defensive exercises and a territorial defense concept, as well as the Alliance's failure to build a mobile response force. The Polish government has also come to question the political will of some NATO members and has doubts in the credibility of the Article V commitment. In this context, Warsaw is not eager for a change in NATO nuclear policy. A move toward a "no first use" policy would be of concern, particularly in light of Russia's increased emphasis on tactical nuclear weapons. As for U.S. nuclear weapons, Warsaw strongly believes that some should remain in Europe, even if it has no particular view as to the specific numbers or specific basing countries.⁵⁰ Polish Foreign Minister Sikorski has called for deep reductions in tactical nuclear weapons and their eventual elimination from Europe, but in the context of reductions by *both* the United States and Russia.⁵¹

The Czech government shares similar concerns. Prague would not be enthusiastic about a change in NATO declaratory policy on nuclear weapons, given its concerns about the impact of such a change not just on Russia but on Iran. A Czech "food for thought" paper noted, "the current NATO nuclear

deterrence policy continues to have fundamental political significance ... It must not be weakened." Downsizing the U.S. nuclear presence in NATO would "politically weaken the Alliance, severing one of the most visible symbols of its transatlantic nature. Potential negative consequences for the cohesion of NATO will outweigh possible political gains in other fields..."⁵²

Like the Poles, the Czechs have concerns about the lack of NATO contingency planning or exercises for Article V defense against possible Russian aggression. They worry about the politics of changing nuclear policy: in the aftermath of the decision to reconfigure missile defense in Central Europe, would a change in NATO nuclear policy be seen as another accommodation of a Russia that has not earned such accommodations? In the right context, Prague might be able to support a reduction in U.S. tactical nuclear weapons in Europe, but not elimination and would want any change termed a reconfiguration rather than a drawdown of weapons. This could be facilitated if missile defense deployments went forward and, as a result of arms control negotiations, Russia reduced its tactical nuclear forces.⁵³

The Latvian government holds views similar to those of the Polish and Czech governments. While seeing nuclear weapons as having political, not military, value, Riga is very cautious about changing either NATO nuclear policy or the deployment of U.S. nuclear weapons in Europe. It sees little rationale for changes, particularly given the importance it attaches to Article V territorial defense and Russia's view of NATO as a potential adversary.⁵⁴ The Estonian and Lithuanian governments share these views.

Given the Iranian effort to acquire nuclear weapons, Turkey's position receives close attention. Indeed, some analysts see the importance of U.S. nuclear weapons in Europe related as much, if not more, to reassurance of Turkey in the face of a possible Iranian nuclear capability as to deterring Russia. The Turkish government sees the value of U.S. nuclear weapons in Europe as underscoring the link between the United States and Europe. Ankara is not pushing for any major changes in NATO nuclear policy,

particularly given everything else that is currently on the Alliance's agenda. Maintaining the credibility of the NATO deterrent against all possible adversaries is the key question for Turkey. Withdrawal of American nuclear weapons could undermine this, and some in Turkey wonder whether it might not lead to the French proposing a French/European alternative, a difficult question given the recent downward trend in Turkish-European relations.

Some analysts—including some very knowledgeable about Turkish issues—have expressed concern that Iran's acquisition of nuclear weapons would lead Saudi Arabia, Egypt and Turkey to follow suit. Some Turks point out, however, that their country is in a different situation from the other two: NATO's nuclear umbrella covers Turkey. Those who believe Ankara would find itself under pressure to acquire its own nuclear deterrent if Iran becomes a nuclear power argue that the presence of U.S. nuclear weapons in Turkey counters such pressure by providing reassurance of a U.S. commitment.

THE NUCLEAR PLANNING GROUP AND NUCLEAR CONSULTATIONS

The Nuclear Planning Group (NPG) has served as the locus for NATO consultations and planning on nuclear weapons for more than 40 years. All allies who wish to be are members, and it has been one of the Alliance's central mechanisms.

Some worry what a change in policy or a decision to withdraw U.S. nuclear weapons from Europe would do to the NPG's substance and vitality—even if some supporting infrastructure were to remain and training for nuclear use to continue. With U.S. nuclear weapons in Europe, those NATO members who have dual-capable aircraft and/or U.S. nuclear weapons on their soil share the nuclear burden. They have a more direct interest in the Alliance's nuclear policy, making for more serious exchanges. If, on the other hand, U.S. nuclear weapons were withdrawn, NPG discussions would be limited to the contribution of U.S. and British strategic nuclear forces to NATO deterrence (France does not participate in the NPG). Some experts fear that this

would lead to the NPG's decline as a serious venue for nuclear consultations, and might even loosen one of the key links that bind NATO allies together.

THE IMPORTANCE OF ARTICLE V

Moscow's sometimes bellicose rhetoric, the Russia-Georgia conflict, the decline in NATO conventional power and the embrace of Russia as a close partner by some NATO allies have together provoked concern in Central European and Baltic capitals about the credibility of Article V. Those states thus will be pressing in the development of the Alliance's new strategic concept to give primary importance to the territorial defense mission, along with forces, exercises and plans to bolster that. Until these allies are satisfied regarding Article V, they will likely remain cautious about any change in NATO nuclear posture or policy.

It is not that the Central European and Baltic states believe Russian aggression is likely. But, to put it baldly, they do not fully believe that some allies are prepared to back them in a crisis with Moscow or, in the worst (and admittedly unlikely) case, would rush to their assistance with military force to defend against a Russian attack. The Polish government thus has eagerly offered to host U.S. missile defense interceptors and pressed for the deployment of a U.S. Patriot anti-aircraft battery in Poland. The Poles care less about the specific missile system to be deployed; they want American troops on their soil, believing that provides a bilateral assurance of U.S. help over and above Article V. This likely explains the readiness, if not eagerness, of at least two other Central European states to deploy elements of the U.S. missile defense system on their territory.

Deploying Patriot missiles to Poland is an American hardware fix for what is a larger NATO software problem. It is important that NATO look for ways—consultations, contingency plans and perhaps exercises—to bolster the confidence of all member states in the credibility of Article V. If this confidence could be restored, the Alliance might find it easier to consider changes to its nuclear policy and posture. That may be complicated, however, by the Alliance's

current preoccupation with its mission in Afghanistan and the current economic crisis, which likely will put downward pressure on defense budgets.

Of course, Russia is not the only potential threat that NATO must consider. Former Secretary of State Albright led a group of experts in preparing a report with recommendations for NATO's new strategic concept. That report, released in May, noted a variety of threats confronting the Alliance, including proliferation of weapons of mass destruction, international terrorism and cyber attack.

ARMS CONTROL CONSIDERATIONS

The Obama administration has stated that, in the next round of negotiations with Russia, it wishes to address tactical nuclear weapons. Achieving progress on tactical nuclear weapons reductions will not be easy. First, as noted above, Russian military doctrine has come to attach greater importance to tactical nuclear weapons in light of the decline of Russian conventional forces and concerns about the conventional force capabilities of the United States, NATO and China. Second, Russia currently has a large numerical advantage in tactical nuclear arms, which it may not be prepared to negotiate away.

While the number of U.S. and Russian tactical nuclear weapons has not been officially disclosed by either country, a Congressional Research Service study puts the number of Russian tactical weapons at between 3,000 and 8,000.⁵⁵ A Federation of American Scientists report puts the number at 5,390, of which 2,050 are operational.⁵⁶ A Bulletin of Atomic Scientists report estimates the global number of U.S. tactical nuclear weapons at 1,100, of which 500 are operational and 600 in the inactive stockpile.⁵⁷

The U.S. negotiating position would likely seek reductions to equal levels, parity being a fundamental principle of U.S.-Russian arms negotiations. U.S. leverage to encourage the Russians toward such an outcome might come from two sources. First, Russia has traditionally sought the withdrawal of U.S. nuclear weapons from Europe and suggested that nuclear arms be based only on national territory.

The presence of U.S. tactical weapons in Europe thus could have value as a negotiating chip. Second, the United States will likely have a numerical advantage over Russia in terms of non-deployed strategic warheads as the New START Treaty is implemented. If these were put on the table along with tactical nuclear arms, negotiations might trade off one side's advantage for the other's in a negotiation. (One possible approach would be to have a single limit cover deployed and non-deployed strategic and tactical nuclear weapons.)

Even were the United States to offer withdrawal of its nuclear weapons from Europe and offer to negotiate on non-deployed strategic nuclear weapons, it is not clear the outcome would be equal and significantly reduced numbers of tactical weapons. The Russian interest in maintaining a large number of tactical nuclear weapons to offset perceived conventional imbalances appears to be strong; Moscow simply may not be prepared to reduce to levels sought by Washington, even if Washington offers substantial enticements in the negotiations.

Given the role that its tactical nuclear weapons in Europe play in NATO security, Washington should consult with its NATO allies before putting those weapons into a U.S.-Russian negotiation. Most NATO allies appear ready to countenance the inclusion of these weapons in a U.S.-Russian negotiation, though the readiness of some to see the weapons significantly reduced or completely withdrawn from Europe will depend significantly on what the agreement would do in terms of reducing and limiting Russian tactical nuclear arms.

The possibility that tactical nuclear weapons may soon be subject to U.S.-Russian negotiations could argue for not taking a unilateral decision on the reduction or withdrawal of U.S. nuclear weapons from Europe. Offering to reduce and limit those weapons as part of a bilateral arms reduction agreement would give U.S. negotiators sorely needed leverage. At the same time, NATO should not become so attached to those weapons as a bargaining chip that it decides to retain them forever, even if the Alliance at some future point concludes that such weapons are not

need for extended deterrence. Thus, one approach would be for NATO to avoid unilateral reductions in the near-term, while seeing how the next round of U.S.-Russian nuclear arms reductions negotiations play out and retaining the option of revisiting the issue at a later point.

The United States and NATO should carefully consider how to handle U.S. tactical nuclear weapons. In the ideal world, they could be removed as part of a deal which eliminated—or produced drastic cuts in—U.S. and Russian tactical nuclear weapons to equal levels. The Alliance might alternatively

consider making a dramatic policy gesture: a unilateral decision to remove those weapons. The least desirable approach, however, would be one in which national politics drive decisions by individual governments—for example, the German decision not to procure aircraft with nuclear wiring leads to like decisions by Belgium and the Netherlands, which in turn leaves Italy and Turkey reluctant to be the sole hosts of U.S. nuclear weapons in Europe. If NATO is going to decide to remove those weapons, it should be done as the result of a negotiated agreement or a grand political gesture, not as the result of haphazard national decisions.

6. EXTENDED DETERRENCE AND EAST ASIA

THE SECURITY ENVIRONMENT

Just as the U.S. nuclear deterrent has protected NATO, it has also extended deterrence to key American allies in the East Asia region. China's explosion of a nuclear device in 1964 and broader perceptions of a deterioration in the security environment raised concerns on the part of American friends and allies in the region. Taiwan and South Korea pursued clandestine weapons programs, only to submit to U.S. pressure to end them, South Korea assured in part by the presence of U.S. troops and tactical nuclear weapons. In Australia, the Gorton administration in 1968 took initial steps to create a supply of fissile material, but Australian governments since then have relied on the American deterrent. And although Japan studied the option of going nuclear each time it saw a new external vulnerability, it always concluded that reliance on American extended deterrence was the best and only guarantee of the country's safety.

The security environment in East Asia has evolved considerably since the time, four decades ago, when the region approached something of a nuclear tipping point. North Korea embarked on its own weapons program, and tested a nuclear device in 2006 and another in 2009, raising concerns in South Korea and Japan. China continued a systematic and sustained program of strengthening national power, which started in the economic system in 1979 but is now bearing fruit in the military realm. Steadily, the People's Liberation Army is both acquiring conventional power-projection capabilities and modernizing its nuclear arsenal. China's economic growth

has benefitted the countries of East Asia enormously. Militarily, however, Beijing's growing power fosters new anxieties, particularly in the context of perceptions of American over-extension or decline.

For America's East Asian allies, North Korea and/or China pose the most significant concerns (but not the only ones). It is important to remember, however, that the conventional balance in East Asia still favors the defenders. Japan, Taiwan and Australia are protected by significant bodies of water, and the U.S. Seventh Fleet remains the strongest naval force in the Pacific. As for South Korea, North Korea's conventional capabilities, while certainly not trivial, are degrading.

It should be noted that the East Asian security environment differs from that in Europe in two key respects. First of all, the U.S. nuclear deterrent in Europe is embedded in the American commitment to the NATO alliance, particularly Article V of the Washington Treaty. By contrast, the United States has no parallel multilateral alliance structure in East Asia. The U.S. extended deterrent there is based on bilateral relationships and agreements, so any nuclear debate there will be viewed mainly through a bilateral lens.

Second, the U.S. nuclear commitment to Europe is underpinned in part by the presence of U.S. nuclear weapons deployed on the territory of NATO allies, some of whom maintain dual-capable aircraft that are equipped to deliver U.S. nuclear weapons. The United States never maintained such relationships with its Asian allies, under which it would make

nuclear weapons available to them in the most extreme circumstances. Moreover, the United States withdrew all tactical nuclear weapons from South Korea during the George H. W. Bush administration. At about the same time, the U.S. Navy removed all nuclear weapons from its submarines and surface ships, except for nuclear-armed Trident missiles on ballistic missile submarines. This included removal of nuclear-armed SLCMs, which some had seen as providing an in-theater nuclear presence. Thus, since the early 1990s, the U.S. extended nuclear deterrent for its East Asian allies has been provided by U.S. strategic nuclear forces, either deployed in the United States or aboard Trident ballistic missile submarines.

Given the fact that there are no U.S. nuclear weapons based in East Asia, there is no debate there about withdrawal of those weapons. It is difficult to imagine the circumstances under which U.S. tactical nuclear weapons might be returned to the region. So long as the United States maintained nuclear-armed SLCMs in storage, it had the option—at least hypothetically—of redeploying them on general purpose submarines and surface ships in the Pacific to demonstrate a visible presence of the extended deterrent. That option will be eliminated when the TLAM/Ns are retired, as announced in the Nuclear Posture Review. The review did note that the United States would maintain heavy bombers and fighter-bombers with nuclear capability that could, if necessary, be forward deployed. And the U.S. Air Force regularly deploys B-2 and B-52 strategic bombers to Guam; however, although the United States once deployed a variety of tactical nuclear weapons on Guam, there are none there now.

The Obama administration's Nuclear Posture Review and the U.S. extended deterrent will be judged by America's East Asian allies in this security context. They will assess the effectiveness of the U.S. extended deterrent in light of recent power shifts. Some might see the current situation—in which geography and conventional forces make conventional defense credible—as permitting this shift in U.S. declaratory policy, or even allowing for a more radical policy change. The review, however, will be carefully, even obsessively, studied by governments and security

analysts in the region. And whatever sensible reasons the Obama administration might have for making the shift (e.g., to reduce the role of nuclear weapons in U.S. strategy, as the conventional threat to U.S. friends and allies is modest at best), the response in East Asia, at least initially, will be to see dark clouds as well as silver linings.

AUSTRALIA

Australia would seem an unlikely candidate for a case of extended-deterrence anxiety. It is in the southern hemisphere, while matters of nuclear strategy are more common north of the equator. The country's commitment to the non-proliferation regime is strong, and the Labour Party has a strong nuclear allergy. Yet there is something of a debate among Australian security specialists over extended deterrence. Some ask whether it remains possible. Others ask whether it is necessary.

The position of the Australian government is stated in its defense white paper. The 2009 version provides a clear formulation: “[F]or so long as nuclear weapons exist, we are able to rely on the nuclear forces of the United States to deter nuclear attack on Australia... That protection provides a stable and reliable sense of assurance and has over the years removed the need for Australia to consider more significant and expensive defence options.”⁵⁸

The logic chain behind this conclusion is straightforward: the nuclear threat to Australia is remote; if there is a threat, it comes from rogue states like North Korea and Iran; Australia may rely on the nuclear forces of the United States to deter a nuclear attack on Australia; and that “sense of assurance” has negated the need to consider an independent nuclear option.

More conservative observers are alert to the possibility that the assumptions of this policy, which has guided Australia for most of the last six decades, may erode.⁵⁹ For them, the revival of China and India as great powers forms the broad strategic context. China, North Korea, India and Pakistan already possess nuclear weapons, and many believe that Japan could

acquire them quickly with a radical policy shift. Indonesia, faced with a strong India and China, might someday seek to acquire a modest nuclear capability. That in turn would render Australia less secure.

Another critical factor is declining confidence in the credibility of U.S. extended deterrence. Key here is China's growing relative power vis-à-vis the United States, which weakens its respect for American dominance and might lead Washington to "choose to defend a narrower set of vital interests."⁶⁰ And American and Australian interests regarding China might diverge.

In light of these trends, Australians are weighing what to do. One conservative observer considers the option of an independent nuclear force and a robust ballistic missile defense (BMD), but finds that the long-standing obstacles to the former still remain and that the latter would be expensive and might be ineffective. In the end, he argues that Canberra should "emulate the Japanese model and adopt a multi-layered strategic approach, which at once hedges against future uncertainties [through BMD and a civilian nuclear power industry], but which preserves the proliferation status quo."⁶¹ Extended deterrence would remain as one layer of this approach.

Australian conservatives might have been prepared to regard a shift in U.S. declaratory policy in the direction of "no first use" as intellectually acceptable. Any country that might wish Australia ill is more likely to use nuclear weapons than a conventional attack, because Australia's rather robust conventional forces and geography would probably defeat any conventional attack. They would have seen a "sole purpose" U.S. policy as preferable to a simple adoption of "no first use." Psychologically, however, and absent U.S. efforts to reaffirm extended deterrence, even a shift to a "sole purpose" formula would have reinforced the doubts that conservatives have about the credibility of the American commitment. They will likely appreciate the more modest formulation adopted in the Nuclear Posture Review.

The most prominent, progressive voice in Australia on extended deterrence is probably that of

Gareth Evans, a former foreign minister ("progressive" in the sense of mounting a significant challenge to status quo policies). He is the co-chair and intellectual force behind the International Commission on Nuclear Non-Proliferation and Disarmament, an Australian-Japanese collaborative project. The commission's report, issued in December 2009, took as its premise the conviction that "the risks associated with a nuclear world are unacceptable over the long-term, and that eliminating them requires eliminating nuclear arsenals."⁶² On extended deterrence, it reached the realistic conclusion that America's allies will rely on the U.S. nuclear umbrella for some time to come, but argues that Washington should be able to reassure them of its commitment as a transition towards a non-nuclear world occurs. It suggests that, when it comes to non-nuclear attacks on U.S. allies (e.g., with chemical or biological weapons), U.S. conventional capabilities provide a sufficiently robust deterrent. The report warns against U.S. allies increasing the emphasis on nuclear weapons at a time when the goal is to reduce their number.⁶³ Regarding American declaratory policy, Evans and his colleagues propose that nuclear-weapons states commit to "no first use" by 2025 and in the interim "accept the principle that the 'sole purpose' of possessing nuclear weapons is to deter others from using such weapons against that state or its allies."⁶⁴ There is much in the Nuclear Posture Review's conclusions for Evans to like.

SOUTH KOREA

At the July 2009 meeting of the U.S.-Republic of Korea (ROK) Strategic Dialogue, sponsored by Pacific Forum CSIS, a group of South Korean officials and scholars talked at length about extended deterrence.⁶⁵ Shaping their specific concerns were two more general and long-standing anxieties. On the one hand, South Korea is surrounded by larger neighbors. On the other, it doubts whether it can absolutely trust the United States to supplement, where necessary, its own efforts to ensure security. This combination of perceived relative weakness and fear of abandonment has fostered a strong desire for American reassurance in words and deeds, which could be affected by the change in U.S. declaratory nuclear policy in the Nuclear Posture Review.

For these Koreans, the starting point is U.S. policy toward North Korea's nuclear problem, both in terms of substance and process. Before the Obama administration took office there had been a palpable fear on the part of South Koreans that Washington would deal with Pyongyang on a bilateral basis and marginalize Seoul in the process (as it had during the mid-1990s). The Obama administration effectively allayed those fears by responding firmly to North Korean provocations, but South Koreans worry that sooner or later the United States will abandon the goal of denuclearization of North Korea, be willing to tolerate its retention of nuclear weapons, and try to "manage" the proliferation problem. They argue that Washington should make absolutely clear that its stated goals are its real goals and that it will not accept the legitimacy of a North Korea with nuclear weapons capability.

It was this mentality that infused the drafting of the security portions of the U.S.-ROK joint vision statement, which was promulgated at the time of the June 2009 summit between Presidents Obama and Lee Myung-bok. Reportedly at South Korean request, the statement specifically reaffirmed extended deterrence with a nuclear dimension. It said that the United States and the ROK "will maintain a robust defense posture, backed by allied capabilities which support both nations' security interests. The *continuing commitment* of extended deterrence, including the U.S. nuclear umbrella, reinforces this assurance. In advancing the bilateral plan for restructuring the Alliance, the Republic of Korea will take the lead role in the combined defense of Korea, supported by an enduring and capable U.S. military force presence on the Korean Peninsula, in the region, and beyond."⁶⁶

There are some interesting wrinkles to this desire for Washington to reaffirm its commitment. First of all, some South Koreans see North Korea as the primary target of deterrence and by and large do not regard China as a nuclear problem. Japan, on the other hand, is not irrelevant because a failure to denuclearize or otherwise constrain North Korea might lead Tokyo to pursue a nuclear option. These South Koreans are not worried about the implications of deep cuts for

the American extended-deterrence commitment. The principal concern is whether Washington has the will to use nuclear weapons if deterrence fails.⁶⁷

These views reflect the more conservative part of the South Korean spectrum. Progressives accept the ideal of a nuclear-weapon-free Korean peninsula. As a practical matter, they by and large recognize that extended deterrence is widely regarded as legitimate, and thus see no grounds to argue as a matter of principle that it is unnecessary. (Only those who advocate the withdrawal of U.S. armed forces from the Korean peninsula would argue, in addition, that extended deterrence be abandoned.) On the other hand, the South Koreans see a downside to the U.S. commitment to defend South Korea with nuclear weapons if necessary: North Korea can use the U.S. pledge as a pretext to delay its denuclearization. In particular, they regard the oft-used term "nuclear umbrella" as unnecessarily provocative to Pyongyang and would prefer consistent use of the term "extended deterrence." But progressive scholars have been reluctant to express their views on extended nuclear deterrence since North Korea carried out its first nuclear test in October 2006.⁶⁸ The Nuclear Posture Review, which leaves North Korea outside of U.S. negative security assurances as long as it continues to violate its nuclear obligations, will not address this downside.

By excluding North Korea in this way, the United States *is not* renegeing upon the negative security assurance it provided to Pyongyang during the six-party talks regarding the latter's nuclear programs—even though the DPRK has accused the United States of doing just that.⁶⁹ In the joint declaration concluded by the six parties on September 19, 2005, Washington "affirmed that it has . . . no intention to attack or invade the DPRK with nuclear or conventional weapons."⁷⁰ But the premise of that promise is that North Korea is in compliance with the NPT. Should North Korea resume compliance in a credible way, including giving up its nuclear weapons, the Nuclear Posture Review's negative security assurance would apply to it.

Even if this more recent formulation stands, it is not inconsistent with the reaffirmation of extended

deterrence by the United States and South Korea in the summit of June 2009 cited above. Even if the Obama administration had moved toward a “no first use” pledge, Korean experts would not have regarded it as a problem. Progressives certainly would have responded positively, and more conservative Korean scholars who attended the July 2009 dialogue cited above expressed no anxiety about that possibility. (One of them, Dr. Taewoo Kim, wrote in a separate essay that “even if the U.S. were to come back to a no first use... and no first strike... policy, there may be no ripple effect for extended deterrence,” because the latter applies only to situations where North Korea strikes first.⁷¹)

Still, what a limited number of specialists have said may not be a good predictor for how South Koreans more broadly will respond as they parse the Nuclear Posture Review and its implications for South Korean security. They might consider more fully the implications for North Korean risk calculations concerning a conventional attack against the South; while U.S. policy leaves open a nuclear response, South Koreans may question whether the overall direction toward narrowing the circumstances for U.S. nuclear use might affect North Korean calculations. What is important is the broader context of U.S. policy: “Extended deterrence against North Korea will be valid so long as the U.S. clearly demonstrates its intent and capability to retaliate against any North Korean attack using WMDs on its southern neighbor.”⁷² (The Nuclear Posture Review’s conclusion not to respond with nuclear weapons to a CW or BW attack does not apply to North Korea, as it is out of compliance with its NPT obligations.)

TAIWAN

There is no evidence that Taiwan has pursued a nuclear weapons capability since the United States shut down its program in 1986 (or even thought about pursuing one). That is ironic, as of all U.S. allies and friends in East Asia, it is probably Taiwan that has the biggest strategic reason to exercise the nuclear option. China is building the capability to project power steadily and systematically, in particular against Taiwan. The United States will not

provide an explicit pledge to come to Taiwan’s defense with either conventional or nuclear forces, in part because Beijing explicitly claims the island as its own. Taiwan security planners certainly hope that the United States will come to its aid in a crisis, and from experience they know that the chances of that intervention shrink to a very low level if Taiwan were to pursue the nuclear option. Hence, the island’s leaders cannot afford to dwell on the intricacies of extended deterrence. Rather they must have faith in American support.

Security experts on Taiwan will study carefully the language of the Nuclear Posture Review. The NSA language applies to non-nuclear weapons states under the NPT and does not apply to China, a nuclear weapons state. But Taiwan strategists will weigh what the changes in U.S. policy mean more broadly for the possibility of the United States using nuclear weapons to respond to a conventional attack on the island, and whether those changes weaken deterrence—even though the United States has no formal commitment to Taiwan.⁷³

JAPAN

Although concerns about the U.S. commitment led Japan on several occasions to give at least some abstract thought to the nuclear option, it never took action to begin a program, as did Taiwan, South Korea and Australia. Because the United States agreed that it could create a complete nuclear fuel cycle and reprocess spent fuel, Japan has a substantial amount of plutonium (all under safeguards). There are a wide variety of estimates as to how long it could take Japan to create a nuclear weapon should it lose confidence in the U.S. nuclear umbrella, ranging from a year to a decade.⁷⁴

Yet Japan is also the country least likely to cross the nuclear Rubicon, in large part because the nuclear attacks on Hiroshima and Nagasaki left a significant segment of the public strongly opposed to a military establishment and offensive warfare of any kind, to say nothing of nuclear weapons. Being a non-nuclear weapons state is a part of the national identity. Hence, Japan has consistently supported disarmament.

For example, the Democratic Party of Japan (DPJ), which assumed power in September 2009, endorsed President Obama's April 2009 Prague speech. Foreign Minister Okada subsequently promised "Japan will take leadership to achieve a positive agreement in each field of nuclear disarmament, nuclear non-proliferation, and the peaceful use of nuclear energy."⁷⁵ Okada's predecessor, Nakasone Hirofumi of the rival Liberal Democratic Party (LDP), vigorously supported those same goals in an April 2009 speech, laying out eleven benchmarks for disarmament.⁷⁶

Nuclear disarmament thus reflects an idealistic strain in Japanese foreign policy, one that is found in both progressive and conservative political coalitions. For idealists, extended deterrence gets no more than passing reference, if that.⁷⁷ Indeed, the current DPJ government has placed far more emphasis on investigating whether prior LDP governments allowed U.S. ships with nuclear weapons to enter Japanese territorial waters, in violation of domestic law and policy principles. But there is certainly a realist strain as well, one that is sensitive to changes in Japan's security environment, such as the growing capabilities of both North Korea and China. In this perspective, the need to reinforce the credibility of America's commitment to defend Japan, with nuclear weapons if necessary, is central. If cuts in the number of American warheads went too low, Japanese realists worry that there would not be enough to credibly maintain deterrence, but they have different views on where the lower limit is. One expert estimates that 1,500 is about the lower limit; others say that anxiety would increase significantly if the U.S. nuclear force dropped beneath 1,000 deployable weapons. Idealists would probably regard the extent of U.S. cuts as a non-issue (the logic for the 1,000 weapons threshold is not stated and is probably not based on rigorous analysis).⁷⁸

Extended deterrence did not even become a topic of declaratory policy in Japan until 1968. It was at that point that Prime Minister Eisaku enunciated the four pillars of Japanese policy on nuclear weapons, one of which was relying on the U.S. nuclear deterrent for protection from external nuclear threat.⁷⁹ Because the most conceivable nuclear threat to Japan

was existential (from the Soviet Union), and because the United States seemed so powerful, Tokyo simply put its trust in the United States that its vast retaliatory capacity would be enough to deter potential threats.⁸⁰

On the far right are those who argue Japan should secure its own nuclear weapons.⁸¹ Somewhat less extreme are Nakanishi Terumasa and other conservatives who advocate an expansion of Japan's conventional forces so that Japan could defend itself in case the United States chose not to do so. Discussion of acquiring a long-range precision strike capability to hit North Korean missile bases, which surfaced while North Korea was testing missiles and nuclear devices in 2006, is a case in point.⁸²

On the left, scholars have argued that North Korea is fundamentally insecure. If it were to attack Japan, they say, it would be from a sense of vulnerability rather than to seize an opportunity. Reassurance would be more likely to dissuade Pyongyang from provocation than threats and warning. While still in the opposition, the Democratic Party of Japan picked up on this suggestion, calling at various points for a non-preemptive use pledge and working to build a regional nuclear weapons-free zone.⁸³ (Note that both the right and the left seek more independence from the United States but in very different ways.)

The mainstream view "has been continued reliance on the U.S. nuclear deterrent as an indispensable component of Japanese defense policy."⁸⁴ Japan has affirmed that approach in its most authoritative documents on defense policy, and the United States has reaffirmed (in May 2007, for example) "that the full range of U.S. military capabilities—both nuclear and non-nuclear strike forces and defensive capabilities—form the core of extended deterrence and support U.S. commitments to the defense of Japan."⁸⁵ Yet the anxieties remain.⁸⁶

Tokyo has used a couple of strategies to supplement its dependence on the U.S. deterrent. One is to increase cooperation with the United States on the latter's own priorities in order to reduce any incentives

Washington might have to ignore Japan's interests. Another is to suggest that Japan might go its own way, not because there was a strong reason to do so but as a means of eliciting reaffirmation of the U.S. commitment. Tokyo's periodic studies on the nuclear option exemplify this approach.⁸⁷ Third, Japan decided in the late 1990s to build up its own capabilities, in the form of land- and sea-based missile defense, in close cooperation with the United States. (Such a capability may be effective against North Korea but would be insufficient against China's more robust and growing missile force.)

The 2009 electoral victory of the Democratic Party of Japan raised the question of whether there will be a new mainstream and where it might be located. Although the party and its small coalition parties won primarily because the public lost confidence in the Liberal-Democratic Party's competence on domestic policy, it had staked out a different position on foreign and security policy from the LDP. The DPJ's broader policy principles appear to foreshadow a shift. These include reinserting Japan as a "member of Asia"; pursuing an alliance with the United States in ways that reduce Japan's dependence and deference; contributing to international peace and security through the United Nations rather than as an arm of U.S. security policy; modernizing the national security apparatus in ways that save taxpayers' money; and working for nuclear disarmament through a variety of diplomatic efforts.⁸⁸

As noted, the disarmament goal has been a hardy perennial of Japanese foreign policy, and not just for the leftist parties. But it is a particularly high priority now for Foreign Minister Okada. He proposed three specific steps for the 2010 NPT review conference: "no first use" of nuclear weapons; no use of nuclear weapons against non-nuclear weapons states; and a treaty establishing a nuclear-weapons-free zone in Northeast Asia. One of Okada's Diet colleagues made explicit what was implicit in the proposal: such an approach is how Japan can "escape from the [American] nuclear umbrella."⁸⁹

The DPJ does not make clear how pursuit of a weapons-free zone is feasible in a region where China has

nuclear weapons and North Korea has devices. But the DPJ has sought to avoid discussion of the contradiction between its goals and hard reality.

The DPJ government is struggling to find the right balance concerning the U.S.-Japan alliance. Generally, it has focused on the problems that stem from the presence of American forces rather than the strategic realities that have made that presence necessary—and which, arguably, have not changed. Optimists hope that Japan's new leaders will gradually reconcile campaign promises with the security vulnerabilities that persist. Pessimists worry that the DPJ's quest for an alliance where it has fewer obligations and more benefits will be unacceptable to Washington and that the mutual benefits the alliance affords will be lost.

In this context, nuclear issues are not trivial, and there have been several straws in the wind. First of all, Prime Minister Hatoyama deleted the word "deterrence" from the section on the U.S.-Japan alliance in his January 2010 policy speech (reportedly at the insistence of a DPJ coalition partner, the more pacifist Social Democratic Party).⁹⁰ Second, early this year, Foreign Minister Okada disavowed efforts during the spring of 2009 by security-minded Japanese diplomats to persuade the Perry-Schlesinger Commission to keep nuclear-capable Tomahawk SLCMs operational, because they were "a key component of the U.S. nuclear umbrella."⁹¹ Third, as noted above, Okada proposed that the 2010 NPT review conference consider the principles of "no first use" of nuclear weapons and no use of nuclear weapons against non-nuclear weapons states—proposals that the prior government declined to make, even though it shares the DPJ's views on disarmament.⁹² And fourth, almost half the members of the Diet (parliament) sent a letter to President Obama urging that he "immediately adopt a declaratory policy stating that the sole purpose of U.S. nuclear weapons is to deter others from using such weapons against the United States or U.S. allies."⁹³

On balance, the initial Japanese reaction to the Nuclear Posture Review was positive. DPJ leaders both praised it as "a step toward a world without

nuclear weapons” and reemphasized the importance of American extended deterrence. Predictably, more conservative newspapers had some doubts on the credibility of American resolve, but all papers praised the exclusion of North Korea from the new negative security assurance.⁹⁴ The “step toward” formulation may suggest some disappointment on the part of the government that the Obama administration did not go further toward a “no first use” or “sole purpose” declaratory policy. Where the DPJ government, which is still in its early days, comes out will be the result of a protracted process.⁹⁵ And wherever the government comes out, the more conservative circles that shaped the mainstream view in the past may well have doubts.

CONCLUSION

U.S. nuclear deterrence remains important for Australia and South Korea, but for different reasons:

Australia as a way of reducing the danger of a nuclear attack, and South Korea to dissuade North Korea from launching a conventional attack. In Japan, the old mainstream placed great emphasis on the credibility of the U.S. commitment and was sensitive to changes in American policy. A new mainstream has yet to be formed as issues of threat assessment, security strategy and the value of the U.S. alliance are all contested. In all three countries, conservatives and progressives stake out different positions. The adoption of a new declaratory policy by the United States will likely be welcomed by progressives in each nation—though some may be disappointed that the policy did not change more dramatically. Conservatives in Australia and Japan may well have some worries. South Korean conservatives seem relaxed for now. In Taiwan, extended deterrence is a latent issue, subsumed by the larger question of whether the United States would come to the island’s defense at all.

7. EXTENDED DETERRENCE AND THE MIDDLE EAST

THE IRANIAN CHALLENGE

Extended deterrence today is central to U.S. policy in the Middle East, and in few places is the challenge of maintaining effective nuclear deterrence more daunting. Beginning in 2002, the world learned that the Iranian nuclear program had picked up considerable steam. There is much debate today about both the extent of that progress and Tehran's ultimate goal, but there is now a consensus that Iran will soon have the feedstock, the know how and the machinery to make enough highly-enriched uranium (HEU) to build a nuclear weapon.

Israeli officials have repeatedly declared that an Iranian nuclear arsenal poses an existential threat to the Jewish state and warn that Israel might have no choice but to act militarily to “eliminate” that threat, as it did with Iraqi and Syrian nuclear facilities. The United Arab Emirates has inaugurated its own civilian nuclear program, albeit under stringent safeguards, as a subtle warning to the Iranians that they too have the option of pursuing a nuclear bomb. In private, Saudi officials have told Americans that they will acquire nuclear weapons if Iran does. In such circumstances, no one should assume that Egypt, with its cherished claim to be the militarily most powerful Arab state, would stand idly by. Thus, even the perception of an Iranian nuclear weapons capability could trigger a Middle East nuclear arms race and an Israeli military response that could escalate into a full-scale regional conflict.

With greater or lesser degrees of sincerity and energy, both the George W. Bush and Obama

administrations have attempted to convince Iran to desist from this effort. The Bush administration was unable to bring sufficient international pressure to bear to convince Tehran to stop its enrichment activities at a time when many members of the Iranian regime seemed willing to consider a negotiated settlement. The Obama administration has been more successful in building international support to pressure Iran. However, since the disputed Iranian elections of June 2009 (and the purges and crackdowns that followed), the United States faces an Iranian regime that seems to have limited interest in giving up its nuclear program even though it may be willing to make tactical concessions to deflect harsher sanctions and divide the international community. Consequently, it seems less and less likely that the United States will be able to convince Tehran to give up its efforts to achieve a “breakout” capability any time soon, although it might succeed in delaying the day that it crosses the nuclear weapons threshold.

Some Americans have reacted to this shift in Tehran by advocating either military strikes to try to destroy the Iranian program, or a major effort to support Iran's new internal opposition (the Green Movement) in hopes that it could topple the Islamic regime. The United States certainly has the capacity to inflict tremendous damage on the Iranian nuclear program, perhaps even setting it back by several years. But even a highly successful American air campaign would not eliminate the problem: the Iranian people would probably rally around the regime, and the regime would likely rebuild its program, without international inspections, in concealed locations, with the advantages of hav-

ing done it before, and with justification since it had been attacked. Likewise, one can hope that the Iranian opposition will bring about a velvet revolution, but so far, the regime has shown no sign of collapsing soon, and American assistance to Iranian opposition groups has typically been the kiss of death owing to the long, tortuous history of U.S.-Iranian relations.

In short, promoting regime change and launching air strikes (either by the United States or Israel) might well become elements of an American strategy to deal with the threat from Iran, but they cannot suffice. The United States will have to consider incorporating into that strategy a policy of containment based on extended deterrence that would keep Iran from destabilizing southwest Asia, attacking America's many allies in the region, and dominating its irreplaceable (for now) oil supplies, as long as necessary and perhaps until the Iranian regime collapses of its own internal contradictions.

Declaratory policy is an essential element in establishing an effective nuclear deterrent in the region, and it is therefore no surprise that it loomed large in the Obama administration's Nuclear Posture Review. Iran was singled out, together with North Korea, as a state that is not in compliance with its obligations as a signatory to the Non-Proliferation Treaty. Accordingly, it was explicitly excluded from the "negative security assurances" provided to other signatories in compliance with their NPT obligations, meaning that it could be subjected to nuclear retaliation by the United States, including in response to an Iranian conventional or chemical and biological attack against the United States or its regional allies.⁹⁶

THE CONVENTIONAL THREAT FROM IRAN

Developing extended deterrence against an Iran that aspires to dominate the Middle East is particularly difficult because of the complex nature of the threat it poses to its neighbors. Iran's conventional forces are relatively weak. Unlike the Soviet Red Army or Saddam Hussein's army, Iran's armed forces lack the ground combat power to conquer its large neighbors

Iraq or Saudi Arabia (especially given the limitations of Iranian logistics and amphibious lift). Similarly, the Iranian air force could do some damage to neighboring states, but its aircraft lack the necessary range, ability to generate sufficient sorties, and capacity to accurately deliver ordnance to mount a punishing strategic air campaign. Iranian fighters might fare somewhat better in air-to-air combat against their Arab foes, but they lack the air-frames, pilot skills, range and sustainment to secure air superiority over the Gulf Cooperation Council states (GCC)—except by default.

Nevertheless, Iran still poses a conventional threat to neighboring Arab states. Absent American military forces, Iran will be able to inflict some painful defeats on the nascent Iraqi ground forces for some time to come. Tehran might be able to seize parts of Iraqi territory, and given the proximity of some of Iraq's most profitable oil fields to the Iranian border, even tactical land grabs could have a strategic impact. Likewise, in the absence of American naval and air forces, the Iranians could close the Strait of Hormuz and its vital oil flows unless and until the U.S. Navy and Air Force intervened to reopen it. Finally, Iranian air and missile forces could certainly damage GCC oil facilities and other vital infrastructure (such as desalination plants), again if the United States military were no longer present in the region.

Nevertheless, given the discrepancy in capabilities between Iran and its Arab neighbors in the lower Gulf, it still poses an important threat to the region in the abstract—and one that would become quite tangible were American forces no longer present. Scholarly work on extended deterrence has consistently found that would-be aggressors focus on the regional balance of power in their neighborhood, not the overall balance of power. They typically calculate that they can move quickly, before the distant great power can reinforce its position in the region, and present it with a *fait accompli*.⁹⁷ (Saddam's decision to attack Kuwait despite the fact that he fully expected the United States would oppose him was a perfect, Middle Eastern example of this phenomenon.⁹⁸) Thus, the presence of considerable American

conventional forces in the region would probably be necessary well into the future to ensure that Iran does not believe it can mount a conventional military operation like those described above.

If the United States maintains sufficient air and naval forces in the Persian Gulf region, it would likely be quite capable of joining with local forces to blunt and defeat an Iranian conventional attack on one of its neighbors. The conventional balance therefore should not require a U.S. resort to a nuclear threat as long as American conventional forces remain present in some strength in the Gulf. Nevertheless, the Obama administration's Nuclear Posture Review explicitly retained that option against an Iranian conventional threat, in part to reassure nervous Gulf Arab states that the shift in U.S. nuclear declaratory policy in regard to other threats would not weaken the U.S. commitment to their defense.

Even with American conventional forces remaining in the Gulf as part of a revised extended deterrence posture in the region, Iran's acquisition of a nuclear capability will add further complications. In particular, it increases the threat that Iran might attempt to close the Strait of Hormuz to oil tankers to blackmail the international community. At present, there is little risk of this because Iran appears fully cognizant that any move against the Strait would be met by an overwhelming American conventional blow that would easily reopen the waterway and obliterate much of Iran's naval and air forces in the process. Iranian acquisition of a nuclear capability might not preclude such an American response in the future, but the risk of escalation would doubtless inject greater caution into Washington's thinking.

Moreover, maintaining a significant conventional presence in the region poses a dilemma for the United States, given the high degree of antipathy many Arab populations evince toward a large American military presence. During the 1990s, Saudi Arabia restricted American air forces operating from their air bases because of growing Saudi popular antipathy toward the American presence.⁹⁹ After 2003, the United States quietly removed its forces altogether from the Kingdom because operations had

become so problematic. Many other Arab countries simply refuse to host them. Indeed, in places like Saudi Arabia, the presence of American forces actually helped to exacerbate the internal opposition and terrorist movements against the Royal Family. Bin Ladin himself has regularly claimed that it was the presence of infidel American soldiers within the sacred precincts of the Kingdom that drove him to Jihad against both the Americans and the Al Sa'ud.¹⁰⁰ Thus, American military forces are needed in the region to extend deterrence to American allies against Iranian conventional forces, but their presence can actually worsen the internal situations of these states, making them more vulnerable to Iranian subversion.

Because of the conflicting dilemmas attendant upon the American conventional presence in the region, the Middle East will likely continue to represent a fly in the ointment to those who would like to see the United States move beyond the Obama administration's revised nuclear posture to a blanket policy of "no first use." Under most circumstances, the massive superiority of American conventional forces over their Iranian counterparts—both current and projected—renders an American nuclear umbrella superfluous. However, should Iran cross the nuclear threshold, it will introduce important uncertainties regarding the willingness—not the ability—of Washington to eliminate an Iranian threat to the Strait of Hormuz with conventional forces alone. In that case, Washington may want to retain its current ability to make Tehran understand that the United States is willing to climb much higher on the escalation ladder, if need be. Finally, if U.S. forces were ever removed completely or significantly diminished in the Gulf, Washington might want to retain the residual threat of a resort to nuclear weapons to ensure that Tehran does not mistakenly assume that it could create a military *fait accompli* in the vital oilfields of the region. In short, as long as Tehran maintains its nuclear ambitions, it will be very difficult for any administration in Washington to contemplate removing the Iranian exception to the negative security assurances, which apply only to non-nuclear weapons states in full compliance with their NPT obligations.

IRANIAN SUPPORT FOR INTERNAL SUBVERSION AND TERRORISM

Although an American extended deterrent posture in the Middle East must keep in mind Iran's theoretical military capabilities, the most tangible and dangerous threat that Iran poses to American allies in the region is internal subversion. Iran is the archetypal anti-status quo power: it seeks to overturn the regional status quo, which currently favors the United States and its allies, and create in its place an Iranian-dominated regional power structure. In its determination to drive America and Israel out and eliminate the conservative Arab regimes allied with the United States, Iran has supported all manner of insurgencies, terrorist groups, dissidents and internal oppositions. Since 1979, Iran has attempted to overthrow the governments of Saudi Arabia, Iraq, Kuwait and Bahrain. The Egyptians, Jordanians, United Arab Emirates and others believe that the Iranians have aided their internal opposition figures and terrorist groups as well.¹⁰¹ For the conservative Arab states of the region, this—not the Iranian armed forces—is the greatest threat posed by Tehran.

For its part, Israel does not have to worry about a conventional Iranian attack as do Persian Gulf states, but it does worry at least as much about an Iranian nuclear arsenal as the Arab states because of the potential spur to Iranian asymmetric aggression against the Jewish state. Most Israeli strategic thinkers discount the likelihood of an Iranian nuclear strike. What they do expect is that, should Iran believe that its own nuclear capability can deter Israeli military retaliation, Tehran will press Hizballah, Hamas, Palestinian Islamic Jihad and its other Palestinian allies to attack Israel both more frequently and with much greater ferocity. It could be difficult to convince Jerusalem not to take preventive military action against Iran's nuclear facilities to deal with this problem, but such a strike might create as many problems as it resolves—both for Israel and the United States.¹⁰² Convincing Israel not to strike would therefore require a much higher degree of American commitment to Israel's defense and, perhaps, a more robust nuclear declaratory policy.

Moreover, Israel and the Arab states also worry about another problem different from the Cold War: the

possibility that Iran might provide nuclear weapons or nuclear materials to one of the many terrorist groups it sponsors in the belief that doing so would shield Tehran from retaliation by the targeted state. In truth, this scenario seems implausible. Iran has supported terrorist groups for 31 years and has had weapons of mass destruction (chemical and biological warfare agents) for 22 years; it has never mixed the two. The Iranians seem to recognize that, if Israel or another American ally were attacked by a nuclear weapon, it would eventually be traced back to Tehran, and neither Washington nor Jerusalem would feel the need for incontrovertible evidence before retaliating against it. Nevertheless, this still represents a threat stemming from Iran's potential acquisition of nuclear weapons that would pose major challenges for American efforts to apply extended deterrence in the Middle East. (The challenge of deterring non-state actors, such as terrorist groups, is addressed later.)

Although they rarely specify it, many of Iran's Arab neighbors also seem to fear that Tehran might attempt to use a nuclear monopoly to intimidate them into making humiliating concessions. Many have signaled that, if Iran obtains a nuclear capability, they will follow suit to deter Iran both from more aggressive unconventional warfare and the threat of nuclear extortion. Egypt, Saudi Arabia, the United Arab Emirates and Turkey are all obvious candidates to proliferate for these reasons.

Indeed, the last element of the Iranian threat that bears consideration is this potential to spur regional proliferation. Many Middle Eastern states argue that it would be simply unbearable for Iran to have nuclear weapons if they do not. Their most obvious fear is that an Iran in possession of a nuclear deterrent might feel so safe from American (or Israeli) retaliation with either conventional or nuclear means, that it could act far more aggressively in the unconventional sphere—ramping up its support to Hizballah, Hamas and other terrorist and insurgent groups.

A Middle East with a half-dozen nuclear states would be far more precarious than even the current status quo. Consequently, another important element of

American extended deterrence in the Middle East must be to help reassure all of these states that, even if Iran does acquire a nuclear capability, it will not be able to bully them. Although this cannot be the only element of an American strategy to dampen proliferation, should Iran cross the nuclear threshold, it will become a critical component.

Since 1945, a number of states that faced compelling strategic threats—many of which actually started down the path of acquiring nuclear weapons—were eventually convinced not to acquire nuclear weapons. In every case, an important element involved persuading them that the strategic threat they faced could be handled in other ways. It will be vital to do the same in the Middle East.

Given the importance of reassuring skittish allies in the Middle East, had the Obama administration's Nuclear Posture Review signaled a shift to a policy of "no first use" or "sole purpose," it would have been counter-productive. The states of the region would have seen it as likely portending a reduced American commitment. It certainly would not have increased their willingness to rely on American security assurances, and could have badly undermined it, leading them to take matters into their own hands: air strikes for Israel, and nuclear arsenals for many of the Muslim states in the region. Presumably, these considerations influenced President Obama's decision to adopt a nuclear declaratory policy that was more conservative than hoped for by many in the arms control community.

EXTENDING DETERRENCE IN THE MIDDLE EAST

The United States has compelling reasons to apply extended deterrence to the myriad problems created by Iran's potential acquisition of a nuclear capability, but is likely to find that doing so is more complicated than in Europe and East Asia during the Cold War. The stakes may be somewhat lower in that Iran lacks the capabilities of the Soviet Union, but the task may be more difficult. It will require determined and creative approaches on at least four different vectors.

Laying down clear red lines to Iran. As the United States learned during the Cold War, it is critical to specify to an adversary one seeks to deter (especially one that also has nuclear weapons) what actions on its part will trigger an American military response, conventional or nuclear. The most obvious red line would be for the United States to state that any Iranian use of conventional or nuclear force beyond its own borders—including in the Strait of Hormuz—would be met by whatever means necessary to defeat it. This is the heart of extended deterrence.

A second red line in containing a nuclear Iran might be for the United States to assert that any use of nuclear weapons by any terrorist group associated with Iran would trigger military operations not only against the terrorist group itself, but against Iran. To have its intended deterrent impact, this declaratory policy would need to emphasize that the United States would not necessarily wait for the forensic evidence that could meet international legal standards; rather, the United States would act on the presumption that Iran was responsible. Because of the difficulty of tracking terrorist movements and interactions with the Iranian regime, it would be critical for the United States to put the onus of burden on Tehran and persuade the Iranians to treat their ties with terrorist groups like Caesar treated his wife: they would have to be above suspicion.

Finally, to deter Iran from more aggressively pursuing unconventional wars against the United States and its allies, Washington might want to convey to Tehran that asymmetric warfare on its part would be met by disproportionate asymmetric responses on America's part: support for insurgent and separatist groups inside Iran; undermining Iran's currency; and mounting relentless cyber attacks against Iran, for example.

Underlining overt American commitments to key Middle Eastern allies. A natural adjunct to laying down red lines to Iran would be to make crystal clear America's commitment to the defense of its Middle Eastern allies. Israel, Egypt and Saudi Arabia already have already been officially designated as "major non-NATO allies." It seems likely that the Iranians

already believe that the United States would retaliate if any of those states were attacked, but it will be critical for Washington to remove all doubt, especially when it comes to the smaller Gulf Arab states. This may require the signing of formal mutual defense treaties.

The willingness of the Senate to ratify such defense commitments could be questionable given the troubled relationships the United States has with a variety of Arab countries (over human rights and political freedom in Saudi Arabia and Egypt, and over *Al Jazeera* broadcasting from Qatar). Israel's defense treaty, on the other hand, would likely sail through the Senate, given the degree of support Israel enjoys on Capitol Hill. That could provide the vehicle for convincing the Senate to support formal commitments to Arab allies.¹⁰³ However, Israel has its own reservations about tying its hands too tightly through a formal defense alliance. And in all cases, there is the question of what happens if one of our Middle Eastern treaty allies were involved in conflict with another.

Alternatively, the United States might seek a new regional alliance, one that would carry with it the explicit guarantee of an American military response if an external power attacked any member state. This might be more palatable, both for the United States and Arab governments. Ideally, such a regional alliance would include Israel, although this might be impossible absent a comprehensive Arab-Israeli peace treaty. In the (potentially lengthy) interim, the United States might push for NATO to embrace Israel, as some Americans and Europeans have already suggested. Thus, the new Middle Eastern alliance would extend the U.S. nuclear umbrella to the Muslim states of the region, and NATO would do the same for Israel.

Of course, a regional alliance and/or NATO membership for Israel appear distant and difficult objectives. A potentially more tangible alternative would be to pursue a bilateral defense treaty with Israel and a new security pact for the Arab countries most immediately threatened by Iran in the Persian Gulf. GCC common defense efforts are largely a sham and the Gulf

emirates prefer to handle their defense via bilateral understandings with the United States, making such a multilateral treaty potentially very useful. In this scenario, Washington might supplement such a Persian Gulf security structure with bilateral pacts negotiated with Egypt and Jordan as well.

Iran's Arab neighbors would be reluctant to join a pact that is overtly aimed at a particular country, even though they clearly want protection against Iran. It would therefore be important to present such a regional alliance as the precursor to a broader regional security framework that could even include Iran, were it willing also to forswear nuclear weapons and aggressive behavior.

The GCC states would also have to be willing to sign on to an explicit bargain that would require them to forswear the acquisition of their own nuclear weapon capabilities in return for U.S. nuclear guarantees, whose credibility they would have reason to doubt—especially if Iran acquires nuclear weapons despite declarations by three American presidents of the “unacceptability” of such a development.

Strengthening American allies. For the Israelis, and probably for other American allies in the Middle East, even red lines and American treaties might not be enough to dissuade them from destabilizing behavior in response to the growing threat from Iran. For them, the United States will almost certainly have to demonstrate an even greater commitment to their ability to defend themselves, a point made explicit in the Obama administration's Nuclear Posture Review.¹⁰⁴ In the past, arms sales to the region paid few dividends in terms of creating the kind of integrated military effort the United States has been seeking for 60 years, but they were critical in conveying a sense of reciprocal commitment by signaling that the United States and the buying nation were inextricably bound to their defense relationship.

Nevertheless, given the nature of the Iranian threat, the most useful American assistance to the defense of Arab allies would look very different from that which the United States traditionally provided Europe, East Asia and those same states in the past.

Given that Iran's most potent weapon is its ability to stoke internal unrest in these countries, subvert conservative regimes, and feed the flames of civil strife, U.S. assistance to the Arab states could be focused on helping them develop more effective counterterrorism and counterinsurgency capabilities. It will also require encouragement and assistance to reform their political, economic and social systems to eliminate the underlying grievances which give rise to the internal unrest that the Iranians attempt to enflame.¹⁰⁵

For Israel, the challenge is different. For decades, the United States has provided Israel with the means to defend itself *by itself*. And Israel has its own nuclear deterrent. If, in the service of regional stability, the United States sought to restrain Israel from a preventive military strike against Iran's nuclear facilities, then it would need to strengthen both Israel's own defense capabilities against a possible Iranian missile attack, as well as its ability to deter an Iranian attack by itself. A formal defense treaty on its own would not provide sufficient assurance because of Israel's unwillingness to put the future existence of the Jewish state in the hands of any outside power.

This would likely mean greater assistance to Israeli air defense and anti-ballistic missile defenses (regardless of whether the United States thought them inadequate to the task), enhanced air superiority and air strike assets, and helping Israel develop a secure second-strike capability. This last point would be both the most controversial and the most important. Israel has begun to acquire and deploy modern submarines and has developed long-range cruise missiles for them, presumably in an effort to create a nuclear submarine force capable of surviving any attack on Israel (conventional or nuclear) and delivering a devastating response to any aggressor. That

survivable deterrent is particularly important for a country the size of Israel, and is one of the reasons that the United States has encouraged Germany to sell the submarines to Israel. Washington will need to fully engage on the issue of helping Israel maintain confidence in its survivable deterrent, and that could include some new types of offensive or defensive capabilities or both.

The responsibilities of extended deterrence. Clearly, developing a regime of effective extended deterrence for the Middle East in the face of Iranian acquisition of a nuclear weapon would require the United States to undertake new and far-reaching commitments to the defense of its Arab and Israeli allies. In return, Washington would have to insist that the Arab states forswear acquiring nuclear weapons of their own and that Israel not act preventively against Iran. As history has demonstrated, great powers can sometimes get sucked into regional wars by their alliance commitments to client states pursuing their own interests. Consequently, while Washington would have to do everything possible to ensure that Iran did not underestimate the U.S. commitment to its Middle Eastern allies, so too should it avoid the possibility that U.S. allies would feel so secure behind that American defense commitment that they would take actions that would be provocative or destabilizing.

If the United States is to guarantee the security of its Middle Eastern allies, it can only come at the price of their agreement to end conflict between them, to proliferate no further, and to avoid plunging into war with Iran that such American commitments are meant to deter. In other words, extending deterrence to the conflict-rive Middle East is a very tall order, complex in its requirements and uncertain in its achievability.

8. DETERRING CHEMICAL AND BIOLOGICAL WEAPONS USE

CHEMICAL WEAPONS

Another issue the Obama administration considered in the Nuclear Posture Review was the role that nuclear weapons play in deterring the use of chemical and biological weapons. The administration considered a number of factors in deciding to remove the ambiguity in U.S. policy—as far as non-nuclear weapons states are concerned—regarding a nuclear response to possible chemical or biological weapons attack. (The United States, a party to the Biological and Toxin Weapons Convention and Chemical Weapons Convention, has destroyed its stocks of biological agents and is in the process of eliminating its chemical weapons.)

The arguments for a change in U.S. policy were straightforward. President Obama has stated that he seeks to reduce the role of nuclear weapons in American policy. Another reason for removing the ambiguity was that it contradicted U.S. negative security assurances; Iraq in 1990-91 was not allied with a nuclear weapons state, yet Washington threatened it with a possible nuclear response for any chemical or biological attack on U.S. forces. Preserving the ambiguity could have undercut the new negative security assurances. Eliminating the ambiguity also became easier because robust U.S. conventional forces would remain capable of inflicting massive punishment on an aggressor using CW or BW. That could suffice to deter use of such weapons, especially of chemical arms. Critics of the policy change, however, contended that removal of the threat of nuclear retaliation would weaken the U.S. ability to deter CW or BW attacks, citing the example of Syria as

a non-nuclear weapons state that is believed to have chemical arms.

Chemical weapons are cruel and potent killers. But they are relatively hard to deliver in a militarily significant manner in most cases. To be sure, the potential use of sarin or a comparable high-quality and lethal CW agent in the air circulation systems of large buildings and other public facilities is a non-trivial threat. Unsuspecting and undefended civilian populations can suffer greatly, as Saddam Hussein showed in his brutal al-Anfal campaign against the Kurds in 1988.

But chemical agents are not contagious like some biological pathogens; they do not spread beyond those immediately and directly affected. Given the practicalities of delivery, they need to be employed in large amounts—by the ton—to have large-scale lethal effects in most situations. (This fact also makes it unlikely that nuclear “deterrence by denial” could be effective against chemical, or biological, weapons stocks, which tend to be easily dispersed and thus difficult to eliminate through use of modern, highly destructive conventional munitions of any type.) Even then, at least against modern armies in the field, well-established protective measures can significantly blunt their lethality. Previous experience suggests that, even against poorly defended troops deployed in battle, chemical arms have tended not to cause more than five to ten percent of all fatalities, be it in World War I or the Iran-Iraq war.

Chemical weapons are not a problem to be trifled with, and their use at any scale would constitute a

serious war crime by any perpetrator. Yet they are unlikely to have the potentially apocalyptic effects that nuclear or advanced biological pathogens might, and CW use likely would not fundamentally alter the course of a major military campaign between major powers. While a nuclear response would pose a powerful disincentive to a non-nuclear weapons aggressor contemplating CW use, the Nuclear Posture Review concluded that a threat of nuclear retaliation would not be necessary in view of U.S. conventional capabilities. A similar conclusion would likely hold for other states. For example, a Syrian use of chemical weapons against Israel in a hypothetical future war would be unlikely to incapacitate the latter's armed forces, and in fact would probably increase the odds that Israel would choose to retaliate conventionally by overthrowing the Syrian regime that had authorized such inhumane attacks.

BIOLOGICAL WEAPONS

Given the above, the fundamental issue that must be addressed in considering the basic question of whether nuclear weapons should retain any purpose of deterring WMD use, other than nuclear use, is biological arms. To date, biological weapons have also had severe limits. While conjuring up horrible images of incurable and fatal diseases creating slow, painful death, their actual use has been so limited that the potency of the threat has diminished in the eyes of many. In addition, given their relatively slow typical incubation times, and indiscriminate effects, biological agents have often rightly been seen as more instruments of terror than of purposeful state violence.

The fact that extremely contagious agents have not yet been combined with extremely lethal ones further constrains the magnitude of the existing threat. That does not mean the United States can safely forget about them, assuming that they would not be used, but it arguably does undermine the notion that nuclear weapons would be a necessary or appropriate deterrent against their use against the United States, its forces or allies. Indeed, while U.S. allies have concerns that changes in U.S. nuclear policy could weaken extended deterrence, deterrence of a BW attack has not been a driving factor behind

those concerns; biological weapons thus far have rarely figured in the discussion.

The United States has at times recognized this reality. It publicly committed not to use nuclear weapons against non-nuclear weapon states, unless the latter are allied with nuclear powers in wartime operations (and now has aligned its NSAs to non-nuclear weapon states in compliance with the NPT). Yet American policy had not been consistent. Even while making such NSA commitments at various points, the United States has also sought to retain nuclear weapons as an explicit deterrent against other, nonnuclear forms of weapons of mass destruction, as a matter of targeting policy and nuclear weapons doctrine.¹⁰⁶

There was an element of hypocrisy in this previous American pledge not to use nuclear weapons against non-nuclear weapon states when combined with a willingness to consider using nuclear weapons in response to a biological (or even chemical) attack. Others noted this contradiction and chastised the United States for it. One thoughtful and well-argued study in the 1990s asserted that nuclear weapons should never be used against biological (or chemical) threats or in retaliation for such attacks. In considering the possibility of an extremely destructive biological agent that killed as many as nuclear weapons might, the authors wrote that "... it would be technically and operationally difficult to achieve such high numbers of casualties with biological weapons, and no nation is known to possess weapons so effective."¹⁰⁷ It is a good reason that, as a normal matter of policy, the United States should not plan on any nuclear response to attacks by lesser types of weapons of mass destruction, especially the types of attacks that might be anticipated today or that have been witnessed in the recent past (for example, the chemical attacks during the Iran-Iraq war of the 1980s).¹⁰⁸ From this standpoint, the Nuclear Posture Review reached a sound conclusion on responding to a BW or CW attack.

But this argument is perhaps more persuasive for the technologies of the present rather than a hypothetical situation in the future; things could change over time. That is the crux of the challenge for future

policy and doctrine regarding whether nuclear weapons should have a future purpose of helping deter advanced biological attack.

Biological weapons could become much more potent in coming decades. Biological knowledge certainly is advancing rapidly. To take one metric, the number of genetic sequences on file, a measure of knowledge of genetic codes for various organisms, grew from well under five million in the early 1990s to 80 million by 2006.¹⁰⁹ The number of countries involved in biological research is growing rapidly as well. What about 25 to 50 years from now, a day that current policymakers must contemplate when considering lasting changes to doctrine as well as the pursuit of a nuclear-weapons-free world?

As of 2008, more than 160 states had ratified and acceded to the Biological and Toxin Weapons Convention, but one of its weaknesses is the lack of verification measures. One can naturally hope that better monitoring and verification concepts will be developed in the biological field—just as they must clearly be improved in the nuclear realm if abolition is ever to be feasible even on its own more narrow terms.¹¹⁰ But these techniques will be very hard to devise, and probably rather imperfect in their ability to provide timely warning. One can try various forms of direct as well as indirect monitoring—the latter including looking for mismatches between the numbers of trained scientists and professional positions available to them in a given country, or a mismatch between the numbers of relevant scientists and associated publications.¹¹¹ Big disparities could suggest hidden programs. One can also build up disease surveillance systems and create rapid-response BW investigation teams to look into any suspected development of illicit pathogens or any outbreak of associated disease.¹¹² But the United States will still need a good deal of luck to discover many hypothetical biological weapons programs. Any countries bent on cheating will have a good chance of success in hiding their associated research and production facilities.

For Americans, who long led the way in biology, it is sobering and important to remember that even today, at least half of all important biological research

is already done abroad. It often takes place in small facilities that are very hard if not impossible to identify from remote sensing.¹¹³

For such reasons, it is eminently possible that an advanced “bug”—perhaps an influenza-born derivative of smallpox resilient against currently available treatments, for example—could be developed by a future aggressor state. Such a bug could combine the contagious qualities of the flu with the lethality of very severe diseases.¹¹⁴ This could dramatically alter the calculations of BW use.

It is such a prospect that led University of Maryland scholar John Steinbruner to note “One can imagine killing more people with an advanced pathogen than with the current nuclear weapons arsenals.”¹¹⁵ The state developing this BW agent might simultaneously develop a vaccine against the new disease and use that vaccine to inoculate its own people. It might then use the biological pathogen as a weapon, or a threat, against another country. That could be a country it was interested in conquering; it could also threaten use against the United States and broader international community, to deter other countries from coming to the rescue of another state being attacked directly by the aggressor (analogous to how Saddam Hussein would have liked to deter the U.S.-led coalition from coming to Kuwait’s aid in 1990-1991). If the United States faced the prospect of millions of its own citizens, or hundreds of thousands of its own troops, becoming sick as it considered a response to aggression, and its only recourse was conventional retaliation, its range of options could be limited. Indeed, the very troops called on to carry out the retaliation might become vulnerable to the disease, jeopardizing their physical capacity to execute the conventional operation. Perhaps they could be well-protected on the battlefield, once suited up, but they could be vulnerable before deployment, along with the rest of the American population. A potential adversary, seeing these possibilities, might find the concept of such an advanced pathogen very appealing.

Would there be a clear and definitive policy or moral argument against the use of a nuclear weapon in retaliation for a BW attack that killed hundreds of

thousands—or even millions—of Americans? If the origin of the attack could be identified, as it might well be under numerous scenarios like the one sketched above, and if huge numbers of American civilians had been targeted, the case for restraint would be hard to make. At the least, it might be no stronger than the case for absorbing a nuclear weapons strike and choosing not to retaliate.

What if the United States thought a biological attack by an aggressor imminent? Or what if it had already suffered one attack and others seemed possible? In such circumstances, there could be potential value in a nuclear retaliatory threat against the belligerent state, warning that any future use of biological attacks against the American people or U.S. allies might produce a nuclear response.¹¹⁶

In his classic book on just and unjust war, Michael Walzer asserted that “Nuclear war is and will remain morally unacceptable, and there is no case for its rehabilitation.” He also argues “Nuclear weapons explode the theory of just war. They are the first of mankind’s technological innovations that are simply not encompassable within the familiar moral world.” This would seem to argue (since biological weapons of certain types predated nuclear technologies) that in fact nuclear deterrent threats could never be justifiable against a biological attack. However, the logic of Walzer’s overall case against nuclear weapons is based explicitly on their indiscriminate and extreme effects—characteristics that advanced biological pathogens, which did not exist when he wrote the above words, would share. It is hard to argue that nuclear deterrence of an adversary’s possible use of an advanced pathogen that could kill a million or even ten million is less justifiable than the use of nuclear deterrence against an adversary’s nuclear arms.¹¹⁷

Indeed, it is possible that a nuclear response to such a biological attack might be conducted in a more humane way than the BW attack. Nuclear responses might target military bases and command headquarters, for example. To be sure, civilians would also be at risk in such a nuclear attack, but in proportionate terms a nuclear retaliatory blow could well cause a

smaller fraction of casualties among innocent civilian populations than would a biological pathogen.¹¹⁸

U.S. policymakers had to bear in mind what is possible, at least theoretically, with advanced engineered pathogens. As Steinbruner notes, in discussing the contagiousness of certain flu-borne ailments,

“One strain infected an estimated 80 percent of the world’s population in a six-month period. Normally the incidence of disease among those infected is relatively low, as is the mortality rate of those who contract the disease. However, aviary strains of the virus have killed virtually all of the birds infected, which suggests the possibility of highly lethal human strains as well.”¹¹⁹

It was these kinds of considerations that led the Nuclear Posture Review to incorporate a hedge with regard to biological weapons. While U.S. policy now is not to respond with nuclear weapons for a CW or BW attack by a non-nuclear weapons state, the U.S. government retained the option to reconsider nuclear retaliation with regard to BW if there were major advances in biotechnology that were put to use for BW purposes.

But the other side of the argument is not inconsequential, either. Advanced biological pathogens may never be developed; nuclear weapons already have been not only developed but mass-produced and used. Retaining the threat of nuclear retaliation based on hypothetical concerns about possible future developments with biological agents that are far from inevitable may be unnecessary and unjustified. Surely it would be seen as cynical in the eyes of some, as a barely veiled attempt to find an excuse to maintain dependence on nuclear arms, and could undercut the value of the policy change in reducing the relevance of nuclear weapons.

Moreover, if a biological weapon with mass casualty features ever were developed and utilized to devastating effect, the United States would not be constrained in its retaliatory options in any event. If a million Americans, Germans, Italians or Japanese were killed

by a superbug, it would be hard to imagine a particularly strong international criticism if Washington reversed its previous pledges and responded with nuclear arms. If necessary, this point could be conveyed privately through diplomatic channels to U.S. allies in advance, as a way of shoring up the credibility of the American extended deterrent even as the formal

role of nuclear weapons was publicly constrained by announcement of a new doctrine. This could offer a way to avoid allowing the unlikely and extreme scenario of horrific biological attack to stand in the way of the more immediate agenda of reducing the role of nuclear weapons in U.S. security policy.

9. DETERRING NON-STATE ACTORS

THE LIMITS OF DETERRENCE

As Washington considered its nuclear declaratory policy, it had to contend with a new and very difficult challenge for U.S. nuclear deterrence policy: how to deter a nuclear or radiological attack by a non-state actor, specifically a terrorist group.¹²⁰ Indeed, the Nuclear Posture Review made clear that it aimed to realign U.S. nuclear policy to address the challenges of nuclear proliferation and possible use of nuclear weapons by terrorists as its key priorities.

The particular challenge with non-state actors is that, unlike in the case of state actors, the United States may not be able to persuade the terrorist group that the costs of aggression will clearly outweigh any possible gains. Any acquisition of nuclear fissile materials for a bomb or a radiological weapon by al Qaeda-type groups or millenarian terrorist groups is especially worrisome, since such groups have exhibited a willingness to use weapons of mass destruction against the United States and its allies.

This limitation to deterrence in the case of terrorist groups may arise for several reasons. First, the United States may not be able to identify the perpetrator of the attack and hence credibly threaten severe retaliation. Second, the terrorist group may not own any territory or anything else of value that the United States could threaten to destroy in retaliation, with nuclear or conventional means. This includes the lives of the terrorists, since some may not value their lives or even prefer to die as martyrs. Third, the United States may not be able to credibly signal any assurance that it would forgo

punishment against the terrorists if they do not use a nuclear weapon. The United States may always feel compelled—or be perceived to be compelled—to act to incapacitate or otherwise attack the terrorists if it knows their location, albeit through arrests or Predator strikes. The terrorist group may thus feel that it has nothing to lose. Fourth, the act of great destruction in the United States may in and of itself be the ultimate goal of the terrorists or may be a motivating mechanism to demonstrate the group's prowess and commitment to a wider audience, such as jihadi sympathizers throughout the world that would not be subject to U.S. retaliation.

DETERRING THE DETERRABLE

Not all terrorist groups are irrational fanatics driven to horrific actions or which have no political objectives that the United States could hold at risk through its retaliatory policy. Many terrorist groups, such as the Revolutionary Armed Forces of Colombia (FARC), the now defeated Tamil Tigers in Sri Lanka, previously the Irish Republic Army in Northern Ireland or the Red Brigades in Italy, Hamas in Palestine or Hizballah in Lebanon have local goals that the United States can place at risk. Washington can offer large-scale military support to their opponents or threaten a direct military intervention against the terrorist group. Many such groups will be self-deterred from contemplating a nuclear or radiological attack, and others can be deterred through a carefully-crafted policy. Similarly, many criminal groups that might participate in nuclear smuggling networks only for financial gain may be deterrable since the United States can threaten to unleash the

full might of its law enforcement and military capabilities against them and thus end their existence, which such groups do indeed value.

The Nuclear Posture Review attached considerable importance to the problem of non-state actors, stating that nuclear terrorism and nuclear proliferation have become the most pressing challenges in a world where the threat of a global nuclear conflict is remote. The review called for steps to secure nuclear materials, disrupt nuclear smuggling efforts, deter states that might assist terrorists, and develop improved nuclear forensics for tracing the origin of nuclear materials.¹²¹ There is more that could be done regarding non-state actors.

A U.S. declaratory policy that specifies the kind of non-state actors it will pursue with the greatest determination could alter the calculations of many non-state actors. The United States might issue a statement that, if any terrorist organization, other belligerent non-state group or any criminal group were to participate in nuclear smuggling, it would automatically be elevated to the highest priority among non-state actors for the United States to target and destroy, regardless of the nature of the group's local or global objectives and designated enemies. Such a statement could deter many such groups from participating in nuclear smuggling.

Such a declaratory policy would be fully consistent with the policy changes announced in the Nuclear Posture Review that reiterated the "U.S. commitment to hold fully accountable any state, terrorist or other non-state actor that supports or enables terrorist efforts to obtain or use weapons of mass destruction, whether by facilitating, financing or providing expertise or safe haven for such efforts."¹²² In this wording, the Nuclear Posture Review explicitly endorsed holding the gamut of the nuclear smuggling network—including states, organizations and individuals—accountable. In doing so, the declaration increased both the scope and the discriminating nature of U.S. retaliation, thus enhancing both the severity of the punishment and the credibility of its application. Nonetheless, the inability to deliver the promised painful punishment in cases of nuclear

smuggling, such as North Korea's assistance to Syria in 2006 to build a nuclear reactor, despite warning from the Bush administration of serious consequences, weakens the effectiveness of deterrence against nuclear smuggling. To somewhat redress previous failures to punish acts of nuclear smuggling, the U.S. government may particularly want to emphasize in its declaratory policy and quiet diplomacy the severity of the offense if nuclear materials or components are transferred to a non-state actor. The U.S. government might also consider an even stronger wording directed at non-state actors: "It is U.S. policy that in the event of a nuclear attack on the United States, its allies or its partners by a terrorist group, the United States will hold any state and non-state actor that facilitated the transfer of nuclear material to the terrorist group fully accountable, and it will be the highest priority of the United States to incapacitate such non-state actors by all means available."

AND THE DIFFICULT-TO-DETER

Two classes of terrorist groups, however, are unlikely to be deterred by such a declaratory policy: terrorist groups who seek to inflict maximum damage to the United States, such as al Qaeda, and millenarian groups that see the destruction of the world or a country as an objective in itself and a path to salvation, such as the Japanese Aum Shin Rikyo. Although deterrence may be almost impossible in the case of the latter type, while terrorist groups that seek to inflict maximum casualties but not destroy the world may be more susceptible to a deterrent approach, both represent extraordinary challenges to deterrence policy. There is little doubt that, if al Qaeda could obtain fissile material, it would be highly motivated to use it against the United States or American allies. The majority of al Qaeda's objectives are so irreconcilable with U.S. primary security and geostrategic interests, such as an Islamic caliphate spanning the greater Middle East, an end to the "apostate" regimes of Saudi Arabia, Pakistan, Egypt, etc., and absence of any form of U.S. presence in the Middle East, that the United States could never concede to accepting them, even implicitly.¹²³ Thus, combined with its salafi ideology that praises

violence, al Qaeda has little reason to show restraint in its means to attain its objectives. In fact, it has explicitly announced the destruction of the “Far Enemy,” i.e., the United States, as critical in achieving these objectives.

In the case of such highly motivated terrorist groups, the focus of deterrence thus must center on the nuclear network: against weakly motivated non-state actors (as discussed above) and against states that are part of such a network. The deterrent policy thus must also focus on states that would be the potential sources of fissile material for the terrorist end-user or for a general nuclear black market from which a motivated terrorist group could obtain it, as the Nuclear Posture Review also recognized by focusing on nuclear proliferation and nuclear terrorism. Since no terrorist group can produce nuclear fissile material on its own, a state will be the ultimate origin of any nuclear fissile material used in a nuclear or radiological attack by a terrorist group.

U.S. declaratory policy could—and the Nuclear Posture Review indeed does—indicate that any state supplier of fissile material to terrorists would be held accountable for such a transfer and that the United States would retaliate against it. Such a statement is consistent with the new U.S. negative security assurances. Controversy could arise in the unlikely case of a non-nuclear weapons state nominally in compliance with its NPT obligations but clandestinely providing fissile material to a terrorist organization or, more likely, failing to put in adequate safeguards to minimize diversion or theft. The Nuclear Posture Review currently states the United States would hold fully accountable any state for any form of assistance to terrorist groups to obtain weapons of mass destruction. Determining responsibility and appropriate response would be more complex in the case of a state’s negligence to prevent theft, rather than willful assistance to non-state actors.

The United States could strengthen the deterrent message by adding, “It is U.S. policy that, in the event of a nuclear attack on the United States or its allies by a terrorist group, the United States will hold the country that provided the fissile material and/

or other technology to the terrorist group fully accountable. This includes retaining the option of retaliating against that country as if the country itself had conducted the nuclear attack.” While perhaps raising the profile of nuclear weapons in U.S. policy to some extent, such additional phrasing would not be inconsistent with the Obama administration’s commitment to deemphasize nuclear weapons and work toward a nuclear-weapons-free world. The Nuclear Posture Review links its negative security assurance to standing with the NPT, noting that the United States “will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to NPT and in compliance with their nuclear non-proliferation obligations.” But it exempts nuclear-weapons states from the negative security assurance; a state that provided fissile material to a terrorist group could be treated similarly.¹²⁴

The effectiveness of such a deterrent threat against state-facilitators of nuclear terrorism would depend on two factors: whether the United States could credibly signal that it has the capacity to identify the state source of the nuclear material, and whether the United States could then credibly threaten retaliation in the case of a transfer. The former is a matter of technical and intelligence constraints; the latter is a matter of potentially more intractable political constraints, where the credibility of the threat of punishment depends on both the nature of the state (i.e., the level of its culpability, internal control, international power, and the consequences of its being subjected to the threatened punishment, such as its demise) and the nature of the retaliatory threat.

Nuclear forensics are making progress in identifying the origin of nuclear materials, but identification is technically complex, and depends on the type of bomb used and, critically, the availability of samples for matching.¹²⁵ Given the complexity of nuclear forensics, potential state-suppliers may believe that the leaked nuclear material will not be linked back to them.

The United States could mitigate these problems by several strategies. First, it should devote additional resources to strengthening its nuclear forensics

capability, as the Nuclear Posture Review calls for and as the Bush administration began doing in its last year. Second, it might consider declaring publicly that its nuclear forensics capability is impressive and continually improving. If potential providers of fissile material credit the U.S. government with greater forensics capability than it has, there is no reason to discourage that belief. There is a risk that, if someone tested U.S. nuclear forensics capability and the United States failed to identify the source, the credibility of the U.S. forensic capability would be undermined, making deterrence even harder. However, the limits to nuclear forensics are well known. Thus, the cost to future credibility by failing to identify in one instance would likely be smaller than the benefit of potentially deterring more nuclear transfers, at least initially, by emphasizing the effectiveness of nuclear forensics. Third, the U.S. government might want to consider devoting greater intelligence and clandestine assets to acquiring nuclear samples from the broadest array of countries that have nuclear materials and subsequently inform those countries that it can link nuclear materials back to them. Washington could also consider establishing an international database of nuclear samples that is updated on a frequent basis—warning that countries that refuse to contribute samples risk being seen as likely sources in the case of the smuggling of fissile material or a terrorist nuclear attack.

Establishing the credibility of punishment will also depend on other factors, such as the state supplier's willingness to take risk and the actual likelihood that the United States would deliver a very costly retaliatory response. For example, if the source state could convincingly claim that the fissile material was stolen, it might believe that the United States would be highly constrained in its retaliation. The wording suggested above for a U.S. declaratory policy toward state suppliers is sufficiently broad to include the possibility of punishment in the case of state negligence in securing fissile material and at the same time sufficiently vague to allow for a credible punishment. (Threatening a maximalist punishment is likely to be far less credible than threatening a more limited punishment in the case of state with inadequate safeguards than in the case of a state's

established willful complicity.) It is thus likely that such a declaratory policy could induce many states not only to desist from purposefully transferring fissile materials to non-state actors, but also to implement proper safeguards to prevent theft.

Nonetheless, deterring terrorist groups from engaging in a nuclear or radiological attack against the United States is far from failure-proof. Achieving anything like the level of stability of that between two nuclear adversaries under MAD will be impossible. With some terrorist groups, deterrence is likely to fail because of systemic deficiencies and their ideological anti-Americanism, rather than due to inadvertent escalation and miscommunication.

While deterrence cannot be used as a sole or primary strategy against terrorist groups attempting a nuclear or radiological attack, it can be employed as one of a mix of strategies, since it is likely to be effective against some terrorist groups and some other non-state and state actors in the nuclear smuggling network. Still, other strategies—including incapacitation of the most dangerous terrorist groups and supply control mechanisms to prevent the leakage of fissile materials from states—are likely to be more effective.¹²⁶ The Nuclear Posture Review emphasized the following programs as critical elements of supply-side control mechanisms: the Global Nuclear Energy Partnership that seeks to discourage the proliferation of indigenous fuel cycle facilities by establishing international fuel banks; the Global Threat Reduction Initiative to remove and secure high-priority vulnerable nuclear material around the world; the International Nuclear Material Protection and Cooperation Program to install nuclear security upgrades at weapons complexes in Russia and elsewhere; cooperative threat reduction programs, such as Nunn-Lugar, to secure and safely eliminate weapons of mass destruction and their means of delivery and dispose of no-longer needed weapons-grade plutonium; and the commencement of negotiations on a Fissile Material Cutoff Treaty to halt production of fissile materials for use in nuclear weapons. The Nuclear Posture Review also stated the need to enhance interdiction capabilities and efforts, such as the Proliferation Security Initiative to interdict

WMD-related transfers, the Container Security Initiative to screen U.S.-bound cargo; and the Second Line of Defense and Megaports programs to install radiation detectors at key borders, airports and seaports. A combined strategy that includes deterrence

and addresses the demand, transit and, critically, supply elements of nuclear smuggling to terrorist groups should not be expected to eliminate the possibility of a nuclear terrorist attack, but it can significantly reduce its likelihood.

10. FINAL COMMENT

IN COMPLETING THE NUCLEAR POSTURE REVIEW, the Obama administration sought to balance its desire to reduce the role of nuclear weapons in U.S. security strategy with the need to reassure U.S. allies and partners and maintain effective extended deterrence for them. The review produced significant changes, but the result was a declaratory policy that for some did not go far enough in terms of reducing the role of nuclear weapons and for others went too far and undercut the credibility of the U.S. extended deterrent. Many questions factored into the specific conclusions of the review. They include:

- The security situation in Europe has changed dramatically since the Cold War, when NATO relied heavily on U.S. nuclear weapons to offset Soviet and Warsaw Pact conventional advantages. In contrast, NATO today has significant conventional force advantages over Russia. This, and growing Russian concern about China, have led Moscow to place greater emphasis on its tactical nuclear weapons.
- Debate has begun within Europe over whether NATO should change its nuclear policy and posture. Some allies argue that the Alliance should make its contribution to nuclear disarmament and that the U.S. extended deterrent does not require the presence of American nuclear weapons in Europe.
- Other NATO allies, particularly in Central Europe and the Baltic region, continue to worry about a possible Russian threat and fear that a change in NATO nuclear policy or posture might be read as a weakening of the American commitment to Europe. This appears to reflect deeper anxieties over the credibility of Article V.
- If the United States and NATO decide to reduce or remove U.S. nuclear weapons in Europe, it would best be done in the context of an arms control negotiation that secured significant steps by Russia with regard to its tactical nuclear weapons.
- During the Cold War, in part because of doubts about the U.S. extended deterrent, Taiwan, South Korea, Japan and Australia at least considered acquiring nuclear weapons, and Taiwan and South Korea actually tried.
- Since the end of the Cold War, U.S. allies in East Asia have pursued non-nuclear policies. In South Korea, Japan and Australia, specialists disagree about the future of extended deterrence because of larger splits about the role of nuclear weapons and whether their countries face an existential vulnerability from nuclear weapons states.
- The recent Nuclear Posture Review has only modest implications for East Asian security. South Korea worries less about extended deterrence than it does about the fundamental U.S. approach to North Korea, which the Nuclear Posture Review excludes from a negative security assurance. Japan's main threat comes from North Korea and China, a

nuclear weapons state, but it has begun to worry about how extended deterrence would work in practice. Australia benefits from the fact that it is an island with robust conventional defenses. Taiwan's only threat comes from a nuclear weapons state (China).

- Iran's acquisition of a nuclear capability of some kind—regardless of whether it deploys an actual nuclear arsenal—would greatly complicate the security situation in the Middle East. It would certainly increase the importance of American extended deterrence in the region. Given its intense interest in stability in this oil-rich, volatile region, the United States would have to deter Iranian aggressive ambitions—conventional and non-conventional—which might be emboldened by its acquisition of a nuclear capability.
- As Iran approaches the nuclear weapons threshold, preventing a nuclear arms race in the Middle East will become a U.S. imperative. Dissuading regional allies from taking unilateral steps to protect themselves against Iran either by military action or acquisition of their own nuclear weapons will require an enhanced and overt American commitment to their security.
- Existing chemical and biological weapons are generally incapable of radically shifting the balance of power or of necessitating a U.S. nuclear response. As such, the Nuclear Posture Review was correct to downplay the likelihood of any such need for U.S. nuclear weapons.
- Future biological pathogens could in theory become much more lethal, making it conceivable that the United States will want some sort of nuclear hedge. Again, the Nuclear

Posture Review correctly made this distinction as well.

- Deterrence can be employed as one of a mix of strategies against non-state actors considering a nuclear or radiological attack, since it is likely to be effective against some terrorist groups and criminal organizations. Strengthening nuclear forensics capacity will facilitate deterrence against state suppliers of nuclear materials.
- The effectiveness of deterrence is likely to be greatly limited in the case of terrorist groups seeking to inflict maximum casualties on the United States and allies and in the case of millenarian groups. Against such groups, other strategies—including incapacitation of the group and supply control mechanisms to prevent the leakage of fissile materials from states—are likely to be more effective means to prevent nuclear or radiological terrorism

Looking ahead, NATO allies are already discussing whether NATO should alter its nuclear policy and what to do about U.S. tactical nuclear weapons in Europe. East Asian allies will weigh the U.S. policy in light of the new and evolving security challenges that they face. Washington will be pondering how to adjust its policy in the Middle East to deal with an Iran that aspires to nuclear arms, taking close account of the concerns of its allies in the region. And the U.S. government will have to devote greater attention to the most vexing deterrent target: non-state actors.

Deterrence and extended deterrence will be essential to meeting all these challenges. But they are evolving concepts, as dynamic as the challenges with which they must deal. The Nuclear Posture Review, while setting important new directions for U.S. nuclear policy, will not be the final word.

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- ¹¹¹ Michael Moodie, Cheryl Loeb, Robert Armstrong and Helen Purkitt, “Good Bugs, Bad Bugs: A Modern Approach for Detecting Offensive Biological Weapons Research,” *Defense and Technology Paper 54* (Washington, D.C.: Center for Technology and National Security Policy, National Defense University, September 2008), p. v.
- ¹¹² Newt Gingrich, George Mitchell and the Independent Task Force on the United Nations, *American Interests and U.N. Reform* (Washington, D.C.: U.S. Institute of Peace, 2005), p. 83.
- ¹¹³ See Mark Wheelis, “Biotechnology and Biochemical Weapons,” *Nonproliferation Review* (Spring 2002), pp. 48-53; and Michael A. Levi and Michael E. O’Hanlon, *The Future of Arms Control* (Washington, D.C.: Brookings, 2005), pp. 76-77.
- ¹¹⁴ See for example Carina Dennis, “The Bugs of War,” *Nature*, no. 411 (May 17, 2001), pp. 232-35, available at www.nature.com.
- ¹¹⁵ John D. Steinbruner, *Principles of Global Security* (Washington, D.C.: Brookings, 2000), p. 178.
- ¹¹⁶ Keith B. Payne, “On Nuclear Deterrence and Assurance,” *Strategic Studies Quarterly*, vol. 3, no. 1 (Spring 2009), p. 45.
- ¹¹⁷ Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (New York: Basic Books, 1977), pp. 269-283.
- ¹¹⁸ See “On Nuclear Deterrence and Assurance,” p. 59, for a discussion of the potential utility of smaller and possibly more accurate nuclear weapons. Today’s weapons might not only be used in more remote locations, but other steps could be considered too—giving populations warning of imminent attacks near cities, possibly detonating warheads higher in the atmosphere than would normally be considered “optimal” depending on the specifics of the situation, and so on.

¹¹⁹ *Principles of Global Security*, p. 180.

¹²⁰ If people were evacuated promptly from an area contaminated by a radiological attack, a radiological attack would result in far fewer casualties than a nuclear one. But although it may not result in a mass-casualty event, its psychological impact would still be significant.

¹²¹ *Nuclear Posture Review Report*, pp. 9-13.

¹²² *Nuclear Posture Review Report*, pp. vii and 12.

¹²³ For details on the group's goals and ideology, see, Bruce Riedel, *The Search for al Qaeda* (Washington, DC, Brookings Institution Press, 2008).

¹²⁴ *Nuclear Posture Review Report*, pp. viii-ix.

¹²⁵ William Dunlop and Harold Smith, "Who Did It? Using International Forensics to Detect and Deter Nuclear Terrorism," *Arms Control Today*, Vol. 36, No. 8, October 2006, pp. 6-10. On the difficulties of improving the nuclear forensics capability, see Caitlin Talmage, "Deterring a Nuclear 9/11," *Washington Quarterly*, Volume 30, Number 2, Spring 2007, pp. 21-34.

¹²⁶ *Nuclear Posture Review Report*, pp. 9-13.

ACRONYMS

ABM	Anti-Ballistic Missile
BMD	Ballistic Missile Defense
BW	Biological Weapons
CFE	Conventional Forces in Europe
CW	Chemical Weapons
DPJ	Democratic Party of Japan
FARC	Revolutionary Armed Forces of Columbia
GCC	Gulf Cooperation Council
HEU	Highly-Enriched Uranium
ICBM	Intercontinental Ballistic Missile
INF	Intermediate-Range Nuclear Forces
JSF	Joint Strike Fighter
LDP	Liberal-Democratic Party (of Japan)
MAD	Mutual Assured Destruction
MLF	Multilateral Nuclear Force
NATO	North Atlantic Treaty Organization
NPG	Nuclear Planning Group
NPT	Non-Proliferation Treaty
NSA	Negative Security Assurance
SDI	Strategic Defense Initiative
SLBM	Submarine-Launched Ballistic Missile
SLCM	Sea-Launched Cruise Missile
SORT	Strategic Offensive Reductions Treaty
START	Strategic Arms Reduction Treaty
TLAM/N	Tomahawk Land-Attack Missile/Nuclear
WMD	Weapon of Mass Destruction

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