

Understanding the U.S. Nuclear Weapons Policy Debate

The National Defense Authorization Act of 2008 requires the U.S. secretary of defense to conduct a nuclear posture review (NPR) in consultation with the secretaries of energy and state, and to report the results to Congress before the end of 2009.¹ The NPR, therefore, will be the Obama administration's forum for reviewing U.S. nuclear weapons policy, posture, and related programmatic and technical issues.² Navigating and choosing among sharp disagreements in each of these areas, in order to map the wisest path forward for national and international security, is a difficult task. President Barack Obama has already made decisions on a number of important nuclear issues, but the NPR will need to relate these to the overall nuclear weapons posture.³ How will his desire to ratify the Comprehensive Nuclear Test Ban Treaty (CTBT) relate to the size and capabilities of the U.S. nuclear weapons complex? Should the United States arm some Trident submarines with conventionally-tipped ballistic missiles? Should it pursue new arms control agreements with Russia beyond negotiating a new Strategic Arms Reduction Treaty (START)? What should medium-term U.S. objectives for strategic and non-strategic warhead numbers and types be? What about ballistic missile defense? The list of important

Christopher F. Chyba is professor of astrophysics and international affairs at Princeton University, where he directs the Program on Science and Global Security at the Woodrow Wilson School, and a former National Security Council staff member in the Clinton administration. He may be reached at cchyba@princeton.edu. J. D. Crouch is executive vice president at Qinetiq North America and was deputy national security advisor in the George W. Bush administration. He may be reached at jdcrouch@yahoo.com. This essay grows out of a series of meetings 2007–2008 co-chaired by the authors, and sponsored by the Los Alamos and Lawrence Livermore National Laboratories. Only the authors are responsible for its content.

Copyright © 2009 Center for Strategic and International Studies
The Washington Quarterly • 32:3 pp. 21–36
DOI: 10.1080/01636600903011879

questions is long and, unless integrated into a broader strategic vision, presents a disparate jumble of choices.

These choices will be better made if they are informed by carefully analyzing the nature of the divergent views that underlie major disagreements, and identifying those areas where, to the contrary, there is a broad consensus across the policy spectrum. To this end, this essay attempts to identify eight key divergent views on U.S. nuclear weapons policy, posture, and programs, and explain the most important areas of disagreement. What ideas are at the root of these differences? And where could further work clarify or even help to resolve some of these differences?

How Important is Dissuasion?

One key divergence of views relates to the role of nuclear weapons in dissuading potential adversaries, and differing assessments of the efficacy and appropriateness of nuclear weapons to achieve this goal. In the context of a general discussion of U.S. armed forces, the National Security Strategy of 2002 stated that “Our forces will be strong enough to dissuade potential adversaries from pursuing a military build-up in hopes of surpassing, or equaling, the power of the United States.”⁴ Applied to nuclear weapons, this view would seem to require that some combination of the number of U.S. nuclear weapons and capabilities not fall beneath a certain floor, lest a potential adversary see an opportunity to match or attain superiority over the United States. Proponents of this view emphasize maintaining U.S. capabilities “second to none” as the most effective way to assure allies, dissuade competitors and deter opponents, and seek to avoid a future in which the mutual deterrence that existed during the Cold War between the United States and the Soviet Union is replicated with other non-Russian nuclear powers, such as China. Even though powers such as China can pursue asymmetric advantages over the United States, avoiding a challenge for strategic nuclear superiority, with all its attendant risks and instabilities, is thought to be an important goal in itself.

A very different vision of the future is one in which the existing nuclear weapons states decrease their arsenal to small numbers of nuclear weapons and in which mutual minimal deterrence reigns. Such a world would not only have fewer nuclear weapons but will also allow countries besides Russia, such as China, to have a nuclear arsenal comparable to the United States, at least numerically. Whether this is an acceptable future with China is an additional high-level policy divergence that underlies the nuclear dissuasion debate. Those skeptical of dissuasion agree that asymmetric options for potential adversaries exist, and point out that some of these may prove more challenging to the United States than symmetric challenges.

An ancillary debate is whether or not the United States is intentionally pursuing or unintentionally achieving, nuclear primacy over China and Russia.⁵ This claim has been hotly contested. Some depict the “new triad” of the Bush administration’s 2001 NPR as a tool of nuclear primacy. The new triad consisted of three elements: offensive strike systems (both nuclear and conventional), defenses (both active, such as ballistic missile defenses, and passive), and a responsive defense infrastructure that would provide new capabilities in a timely enough way to meet emerging threats, whereas others argue that the new triad, to the contrary, was intended to decrease U.S. reliance on nuclear weapons.

The concept of nuclear primacy, however, may nevertheless serve to make disagreements over dissuasion and even deterrence more concrete. In one view, primacy might dissuade countries from symmetrically challenging the United States and deterring countries from certain actions, such as deterring China from attacking Taiwan. Capabilities superior to an adversary and perceived as such could divert an adversary to pursue options that are less directly threatening to the United States, in the way that the B-2 bomber program forced the Union of Soviet Socialist Republics (USSR) to further develop and maintain large air defense systems. In another, dangers arising from the appearance of primacy could outweigh its putative advantages by driving countries, such as China and Russia, to adopt higher peacetime alert levels, delegate launch authority to lower level commanders, or pursue new weapon systems. This view draws on classic ideas of the “security dilemma” in international relations theory, in which defense measures taken by one state may be viewed by others as offense-minded and threatening. The measures taken in response may be misperceived in turn, potentially leading in an escalating security spiral to arms races and instability.

Those who place greater value on dissuasion may support programs such as the Reliable Replacement Warhead (RRW), whose advocates claim that it is needed to ensure the long-term reliability of the U.S. nuclear weapons stockpile. The argument is that countries cannot be dissuaded from trying to match U.S. capabilities if they are not confident that the U.S. stockpile is effective for the long term. This in itself, however, is not sufficient for dissuasion. They may also (though not always) support a broader set of nonnuclear strategic options, such as Conventional Trident Modification (CTM) and global Ballistic Missile Defense (BMD), to give the United States a more flexible and adaptable toolkit for dissuasive purposes (and, in the case of CTM, to enhance deterrence). They see the political-military competition as being driven primarily by things external to individual programmatic decisions and are thus more concerned

What ideas are at the root of these differences?

with foreclosing destabilizing opportunities and channeling the competition that they see as likely, if not inevitable.

Those who oppose RRW or other nuclear capabilities characterized as “new” often oppose increased U.S. strategic missile defense capabilities, and sometimes CTM, because they see these as drivers of the arms competition (e.g., the risk that BMD could undermine China’s confidence in its deterrent), and thus harmful to their broader goals of decreasing nuclear forces to minimum deterrence levels. These efforts could give impetus to counterbalancing by a would-be peer competitor or lead to dangerous or wasteful security spirals even with countries not aspiring to peer competition.

How Relevant Is Deterrence Today?

There is broad agreement that at least some terrorist groups are unlikely to be deterred through the threat of punishment either because they have few assets to hold at risk, are too difficult to find or communicate with, or because they would view retaliation as furthering their cause.⁶ There is, however, disagreement over the role of nuclear deterrence with respect to certain “rogue” regimes.⁷

The National Security Strategy of 2002 argues that leaders of “rogue states” share certain similar characteristics, despite having different motives and aims; these include brutalizing their own people, violating international treaties, attempting to acquire weapons of mass destruction (WMDs), sponsoring terrorism, and rejecting the values the United States stands for. The leaders of rogue states, therefore, are more willing to take risks, especially with respect to the use of WMDs, than was the “status quo, risk-averse” adversary the United States faced in the Cold War.⁸ As such, deterrence in its traditional form is seen as less reliable in general. This puts a premium on expanding deterrence capabilities and options, and placing greater reliance on deterrence by denial, dissuasion, defense (especially missile defense), and preventive military action than had previously been the case.⁹ Those disagreeing with these arguments assert that rogue regimes have, in fact, proven to be deterrable, and that the United States has faced such adversaries before, such as China in the 1960s. They further argue that it is now apparent that there are strong limits on both dissuasion (e.g., Iran, North Korea) and preventive war (e.g., Iraq).

At the programmatic level, these differences manifest themselves in support for or opposition to—or at least less emphasis upon—global BMD, possibly conventional strategic capabilities, and especially new nuclear capabilities. The debate over lower-yield nuclear weapons is a good case in point. Those who see deterrence as less reliable want as broad a spectrum of capabilities as possible, such as lower yield nuclear weapons, because they worry about the options open to the country if deterrence fails. They also see deterrence efficacy as being best

maintained with an array of capabilities that both threaten a potential adversary with unacceptable risk and are seen as credible tools by those opponents as well as friends and allies. In this view, lower-yield weapons have more deterrence credibility than high-yield legacy weapons, as well as the ancillary benefit of reducing the overall destructive capability of the U.S. arsenal. Lowering potential collateral damage by going to lower yields is necessary to give the president viable options and, therefore, to make U.S. threats credible, which in turn enhances deterrence. Furthermore, they argue, lower yields demonstrate the United States' commitment to Article VI of the Nuclear Non-Proliferation Treaty (NPT) that urges signatories to take "effective measures relating to cessation of the nuclear arms race" and to move toward complete disarmament.¹⁰

Those who view nuclear deterrence as inherently stronger worry less about expanding options, although they may or may not support transitions to conventional capabilities as reducing reliance on nuclear weapons. They may worry about the U.S. temptation to cross the nuclear threshold if programs to develop lower yields produce more "usable" nuclear weapons. Whether or not those weapons are more likely to be used, however, they are concerned about the negative consequences of the potential impression to the rest of the world that the United States is extending its arsenal to include usable nuclear weapons against its adversaries. The concerns are certainly not about reducing the destructive potential of the U.S. arsenal, but those holding this view would prefer to accomplish this goal through reductions and other limitations that do not, in their view, undermine other important nonproliferation goals. They see less of a connection between deterrence efficacy and war-fighting potential, and therefore view the potential downside of such forces, in particular signaling a greater reliance on nuclear weapons and thereby undermining nonproliferation or arms control goals, as outweighing their putative benefits.

Should the United States pursue nuclear primacy over China and Russia?

Divergent views about the nature of deterrence are at the center of many of the differences over nuclear policy and programmatic options. Disagreement exists over the relative strength and appropriateness of mechanisms for deterrence, and over how reliable deterrence is under different circumstances. There are differences over whether nuclear weapons are appropriate tools to deter threats other than adversary nuclear capabilities. There is also disagreement over the relationship between force structure, the strength of a

Divergent views about the nature of deterrence are at the center of many of the debates.

deterrence posture, and that force structure's relative contributions to stability and nonproliferation goals.

Do Arms Control Agreements Help?

Although assessing any specific proposed arms control agreement depends on the details—including any verification provisions of that agreement—attitudes diverge at the outset

when considering arms control tradeoffs. Some are suspicious that arms control agreements represent a “strategy of the weak” in which Lilliputians seek to tie down the American Gulliver, restricting its freedom of action to deal with threats largely outside the scope of the agreements, including maintaining or building robust options for dissuasion and deterrence outlined earlier in this article. Others reply that those restrictions are necessary and worthwhile to gain the benefits of an agreement as long as its specific benefits outweigh its costs.

Advocates of arms control among the nuclear powers see an important benefit in demonstrating the U.S. commitment to the disarmament process, which is an important nonproliferation goal, to the broader international community. They also argue that fewer nuclear weapons worldwide represents a potential reduction in the risk of nuclear terrorism (assuming of course that stores of warheads and fissile material are well protected) and also, depending on the deployment details, of the risk of unintended use. They see arms control, especially with Russia (and potentially China), as a means of controlling and reducing tensions in these strategic relationships, minimizing wasteful and potentially dangerous security spirals, and as a way of reducing the size of overall nuclear weapons stockpiles in a transparent and verifiable manner that maximizes U.S. national security during nuclear arms reductions. They may advocate certain de-alerting proposals in order to reduce the risk of accidental, unauthorized, or mistaken launch by nuclear powers by lengthening the time required for nuclear launch.¹¹ Some emphasize that de-alerting proposals must also not promote instability by creating incentives for first strikes.

Those less disposed to formal arms control agreements see them as at best an irrelevant continuation of the Cold War mentality that unhelpfully keeps the United States and the Soviet, now Russian, arsenals at the center of the two countries' relationship.¹² At worst, they worry that efforts to dot the “i”s and cross the “t”s in traditional arms control will lead to restrictions on U.S. flexibility in dealing with threats largely external to the U.S.–Russian relationship, and could be an incentive for China to establish itself as a nuclear peer competitor to Russia and the United States. Those advocating de-alerting

point out that some de-alerting proposals are technically reversible, and so are more flexible than formal arms control treaties. Those skeptical of arms control, however, may nevertheless place less value on de-alerting proposals because they tend to see U.S. nuclear forces as substantially secure from terrorist threats, believe that much de-alerting will result in deactivation and imprudent disarmament, or have greater concern about the ability and wisdom of bringing de-alerted nuclear forces back to readiness in a future crisis. They also have less certainty that de-alerting will be perceived and understood as intended by regimes with divergent political and strategic cultures.

It should be noted that while there are broad divergent views of the value of formal arms control agreements, there is much greater agreement that cooperative actions such as data exchanges, strategic policy and force discussions, unilateral and reciprocal site visits, and the like can play an important role in reducing misunderstanding. The Joint Center for the Exchange of Data from Early Warning Systems and Notifications of Missile Launches is an important example. What differences exist are usually over the marginal utility of continued investment in Russia versus in other states, especially given Russia's economic recovery.

What Should Be U.S. Nuclear Use Doctrine?

A range of approaches to nuclear use doctrine are being advocated. Options discussed range from a declaration of no-first-use, to a declaration of no-first-use of a WMD, to a declaration that nuclear weapons are weapons of last resort, to explicit or implicit statements that nuclear weapons must be available for use, and known to be so, against hardened and/or deeply buried targets that might protect an adversary's leadership, WMDs, or other critical assets. A key divergence concerns weighing the putative gains to arms control and nonproliferation objectives from a nuclear use doctrine that would explicitly state the range of circumstances under which the United States would use nuclear weapons against the putative ongoing advantages to deterrence of maintaining greater ambiguity in possible U.S. responses to a variety of circumstances.

Some advocating no-first-use or other of the more restrictive use doctrines see a declaration as a way of demonstrating a commitment to reduce the salience of nuclear weapons in U.S. foreign policy, with little downside risk, because of their view of the inherent credibility of nuclear deterrent threats. They may also be concerned about protecting U.S. leaders from a "commitment trap" that might increase the likelihood of the use of nuclear weapons because of a previously declared commitment to their use in a particular circumstance. Those opposed to no-first-use emphasize concerns about the consequent message to that subset of

The Obama administration could decide to visibly address U.S. nuclear use doctrine.

states that are considered the most dangerous proliferators, or to those putatively more likely to proliferate if the U.S. declaratory policy leads to a perception that its extended deterrent is weak. They are also concerned that no-first-use pledges could be perceived by allies living under the nuclear umbrella as a reduced or withdrawn commitment to nuclear protection.

In addition to divergences over what nuclear use doctrine should be adopted by the United States, there is also an important divergence about whether the posture adopted by the Bush administration does or does not make first use more likely, or appear to be more likely. Advocates of the new triad, which groups nuclear and conventional offensive strike weapons together into one leg, argue that the effect of the new triad is to reduce the role of nuclear weapons in the U.S. posture and to provide the president a broader set of response options—nuclear and conventional, offensive and defensive—with which to deter a new and broader set of security threats and challenges. Critics counter that at least an impression has been given that the United States has expanded both the range of countries against whom, and the circumstances under which, nuclear weapons might be used. This divergence in interpretation over what has been signaled is one reason why the Obama administration could decide to visibly address, with whatever accompanying level of ambiguity, U.S. nuclear use doctrine.

How Do U.S. Nuclear Weapons Decisions Affect Nuclear Proliferation?

Opinions significantly diverge over whether, and if so to what extent, U.S. nuclear weapons policy, posture, or programmatic decisions affect proliferation and the overall support for the nonproliferation regime. This divergence centers on differences over how U.S. nuclear weapons policies and programs influence other states whose cooperation is needed to contain and put pressure on states with proliferation ambitions, and the relative value of that pressure in achieving nonproliferation goals.

To some degree, the differences are over the importance accorded to the different target states interpreting U.S. policy and programmatic decisions. There are at least four such target groups: the other recognized nuclear weapons states; states with apparent nuclear weapons ambitions, such as Iran and North Korea; the countries around or threatened by them that may be potential proliferators, including U.S. allies and friends; and finally the broader international community whose support can help bring pressure on the second

group and, more broadly, maintain the overall health of the nonproliferation regime by implementing effective export controls and many other measures.¹³

There appears to be less divergence on whether nuclear restraint on the part of the United States will directly affect states with nuclear weapons ambitions. Most analysts believe it will not. These states have their own domestic or regional motivations or security concerns that may be driving their nuclear ambitions, even if those concerns include U.S. conventional capabilities. Differences are greatest on whether or not restraint in U.S. nuclear weapons policy influences, and how best to influence, the other groups while avoiding misperceptions about ongoing U.S. commitment to extended deterrence on behalf of allies.

One view puts more emphasis on assuring the potential proliferators of the third group—including some U.S. allies benefitting from security assurances—and therefore places more value on the efficacy of U.S. extended deterrence commitments and threats. The concern is that regional friends and allies can perceive U.S. restraint or new declaratory policy as withdrawing commitments, and therefore be spurred toward proliferation themselves. Specific U.S. policies, plans, and programs may lessen the likelihood that states in the third group would pull the trigger on new nuclear weapons programs. While those who hold this view are not against bringing pressure on nuclear ambitious states from the broader international community, they are often less likely to believe such pressure will work and are dubious in any case that U.S. restraint will earn the support of that broader community. Consequently, they are willing to “pay” less in terms of U.S. restraint to win that support.

Another view is more focused on sustaining the support of the broader international community for the nonproliferation regime generally and for international action against extant proliferators in particular. This group sees restraint, in the form of arms agreements, eschewing new weapons programs, ratifying the CTBT—an explicit part of the 1995 bargain that gained indefinite extension for the NPT—and other measures as potent evidence of U.S. commitment to the nonproliferation regime, especially Article VI of the NPT. This view holds that U.S. assurance goals are more easily sustained without new nuclear weapons programs or policy changes, and therefore values less any putative incremental increase in assurance which might be derived from such actions. Moreover, there is concern that the same programs that might incrementally assure some regional friends and allies would undermine U.S. standing in the international community and foil U.S. nonproliferation objectives.

There is an additional key divergence in the assessment of the threat of proliferation itself. Some view further nuclear proliferation—the increase in the number of nuclear weapons states from N to $N + 1$ —as inherently dangerous, due

One view puts more emphasis on the efficacy of U.S. extended deterrence . . .

to the resulting increased prospects for use, for diversion to terrorists, and the cumulative damage to the nonproliferation regime. Others view the move from N to $N+1$ as far less important than the nature of the “1”: $N+x$ may be of little or no concern compared to $N+y$, if x is a responsible and stable state whereas y is a “rogue” state. A less stark version of this disagreement arises over how to weigh the impact on the nonproliferation regime of

nuclear-related trade with nuclear powers outside the NPT. There is broad concern over the possibility of reaching a “tipping point” at which the nonproliferation regime would collapse, but disagreement over whether that tipping point would more likely be produced by a failure of U.S. assurance policy or a failure of U.S. leadership with respect to NPT Article VI obligations. Both sides are concerned about the policy, posture, and programs of the other nuclear weapons states.

Programmatic choices often align accordingly. Two areas where the divergence may be seen over whether the nature of the state matters are in policy differences over support for the Indian civilian nuclear program or in discussions about expanding Cooperative Threat Reduction (CTR), in its most robust aspects, beyond the former Soviet states.¹⁴ In the case of India, the more traditional nonproliferation view holds that any formal international recognition of India’s nuclear weapons status or arguably fungible support for its nuclear weapons program ought to be eschewed. The opposite view argues that India’s nuclear weapons program is here to stay and that the benefits of cooperating on civilian nuclear power outweigh the negative nonproliferation consequences. In the CTR case, the debate has more simply to do with different views of where to draw the line with respect to NPT compliance in assistance to other states’ nuclear programs. For example, where does cooperation to improve fissile material or nuclear weapons security shade over into assistance to a state’s nuclear weapons capabilities? How likely is, and what would be the impact of, the successful elimination of its nuclear weapons programs? How relevant is a state’s nonproliferation record and commitment to reliable stewardship of its nuclear industry to this judgment?

Should the Goal of a World without Nuclear Weapons Be Pursued?

Those favoring the goal of a world without nuclear weapons—whether as a concrete objective to be obtained in the coming decades or as an aspiration whose realistic pursuit should guide policy—argue that embracing this goal

would improve national and international security for a host of reasons.¹⁵ For example, they argue that reducing the number of nuclear weapons with appropriate disposition of nuclear material would reduce the possibilities for diversion of warheads or materials to proliferating states or terrorists, and lowering alert levels would reduce the risks of war resulting from mistake or miscalculation. They also assert that evidence that the United States and other NPT nuclear weapons states were vigorously living up to NPT Article VI obligations, while

not likely to affect the motives of determined proliferators, would increase the chances that nonnuclear weapons states party to the NPT would support a variety of nonproliferation measures, ranging from improvements in export controls to confronting would-be proliferating states. Eschewing new nuclear weapons capabilities would be important to the nonproliferation regime for similar reasons.

Those opposed to this goal see a significant decrease in numbers of warheads as either largely irrelevant to major nonproliferation goals or even harmful if carried too far. If so, why risk undermining nuclear assurances given to allies who rely on the U.S. nuclear umbrella by emphasizing a goal of nuclear abolition? Whereas those who favor working toward a world without nuclear weapons see an emphasis on nuclear arsenals as abetting proliferation by decreasing support for nonproliferation initiatives, those opposed worry that too much emphasis on abolition would itself drive proliferation, by signaling to states currently reliant on the U.S. umbrella that they may need to develop their own nuclear deterrent and by signaling to hostile proliferators a general retreat from U.S. political–military commitments. Under this view, certain new nuclear weapons capabilities may be advantageous for nonproliferation objectives as they help to impress adversaries with, and reassure allies of, the credibility of the U.S. extended deterrent. This group also believes that NPT commitments largely can, and have, lived up to through prudent ongoing reductions in nuclear force size and composition, and that further reductions, especially in the non-deployed stockpile, can sustain these commitments. They reject, however, taking the United States out of the nuclear weapons business altogether.

Both sides acknowledge some truth to the other’s position, but differ in their identification of the greater risk and the extent to which fine-grained characteristics of the U.S. arsenal are important to deterrence. If the goal of abolition is irrelevant or even harmful to major nonproliferation goals, why should

**. . . Another
focuses more on
sustaining broad
international support
for the
nonproliferation
regime.**

Opponents of nuclear abolition are loath to commit to the CTBT.

the United States relinquish the substantial nuclear advantage it enjoys over most other countries? If it is primarily advantageous to nonproliferation goals, why not acknowledge it as a goal while pursuing it with prudence? The fundamental disagreement lies in differing evaluations of weighing the security to be gained from nuclear weapons against the dangers represented or abetted by these weapons.

At the policy and programmatic levels, this difference is most evident in debates about new nuclear warheads or capabilities. Many favoring the goal of a world without nuclear weapons, supporters of taking the “path” toward this goal, or supporting deep cuts in nuclear stockpiles without endorsing a goal of abolition, by and large see the hazards of supporting a new nuclear weapon as not worth the benefit that may putatively be derived in terms of reliability, safety, or security. Some of these, however, may see some benefit from RRW if it leads to greater comfort with a commitment to end nuclear testing. There is, however, explicit opposition to making this linkage among many favoring deep reductions in nuclear stockpiles.

Those who place greater stock in the assurance value of nuclear forces see new nuclear capabilities in general as important to projecting the image of a United States still committed to the extended deterrence mission, and see specific potential benefits in the RRW not only in terms of safety, security, and reliability, but also adaptability to potential new deterrence missions, such as the development of a lower-yield stockpile, and maintaining a resilient and responsive nuclear infrastructure and workforce. They doubt developing the RRW will have any important negative effect on U.S. nonproliferation policy, especially as it relates to what they regard as its most critical challenges, such as rolling back the North Korean nuclear program, preventing Iran from obtaining nuclear weapons, and preventing nuclear terrorism. But many opponents to the RRW argue that the existing stockpile is already safe, secure, and reliable, doubt that the putative advantages of the RRW outweigh its nonproliferation costs, and argue that it has not been demonstrated that the RRW will in fact have greater reliability than that to be had by maintaining, through ongoing life extension programs, legacy warheads which have a history in the inventory and associated information about them going back for decades.

Opponents of abolition are loath to commit to the CTBT especially, as they see it, without a very high degree of confidence in a sustainable nuclear weapons enterprise. Proponents emphasize the nonproliferation advantages of CTBT ratification as more important, the nuclear weapons enterprise as sustainable without testing, the treaty as locking in a U.S. advantage in nuclear weapons over

other nuclear states (especially China and other nations that have tested much less than the United States), and cite the guaranteed ability to withdraw from the treaty should serious technical doubts arise. Opponents of abolition by and large see the goal of a world without nuclear weapons as unverifiable, likely unattainable unless and until the military advantages of nuclear weapons are rendered obsolete, unsustainable (and even unstable) given the advantages that would accrue to a state that broke out of such a regime, and potentially undesirable in that nuclear weapons have significantly raised the stakes in a return to great power war, and thus reduced its chances. Proponents note that, despite these higher stakes, great power nuclear war did nearly occur during the Cold War.

Is the Expansion of Nuclear Power a Significant Proliferation Concern?

There is a key divergence in evaluating the risks against the advantages of an expansion of nuclear power, both with respect to the overall numbers of power stations, the spread of the front (i.e., uranium enrichment) and back (i.e., plutonium reprocessing) ends of the nuclear fuel cycle, and an increase in the number of breeder reactors. Some emphasize the proliferation dangers that accompany this expansion, others share these fears but see the expansion as unavoidable and hope to minimize these dangers, while still others are less impressed with these dangers and see them as more easily managed and acceptable compared with the advantages gained such as reduced reliance on hydrocarbons and reductions in greenhouse gas emissions.

This area of disagreement is less uniform and therefore less clear cut in its impact on policy and programmatic questions. Some maintain that a major flaw in the NPT regime was its expressed commitment in Article IV to the expansion of civil nuclear power among the nonnuclear weapons states. Others still see this as an important and unavoidable “trade” with the developing world, or even as a laudable goal in itself that can help achieve other important policy goals. But the overall value placed on a civil nuclear future does tend to indicate the level of proliferation risk that various divergent views are willing to accept.

How High a Priority Is Nuclear Terrorism?

There is a broad convergence of opinion that nuclear terrorism is a major, and perhaps the primary, national security threat facing the United States in the coming years. Divergences arise over the manner in, and extent to which, other foreign policy objectives should be modified or subordinated in order to address this threat, and the extent to which U.S. nuclear weapons policy, posture, and programmatics affect the pursuit of this goal.

There is broad agreement on the importance of securing nuclear weapons and materials at the source in order to prevent their becoming available to terrorists.

CTR remains a priority with Russia, where U.S. involvement continues to be needed to ensure Moscow's attention to this issue, though Russian economic growth is taken by many to mean that U.S. financial support is less necessary and appropriate. Differences arise over the extent to which other goals should be influenced by the desire to maintain a good bilateral working relationship with Russia to maintain and extend CTR and pursue counter-nuclear terrorism objectives more broadly. The implementation of CTR programs in Russia has been mostly insulated from ups and downs in the U.S.–Russian relationship in the past. Nevertheless, divergences exist over the extent to which U.S. policy on global BMD or formal arms control agreements with Russia should be influenced by the desire to address aspects of the U.S.–Russia bilateral relationship that are of particular importance to Moscow in order to further CTR or other important nonproliferation goals.

There is a converging view on the value of similar CTR programs with Pakistan, although different analysts draw the line in different places with respect to NPT compliance. Finally, to the extent that a world of increased proliferation is a world with increased opportunities for the theft of nuclear warheads or materials, many of the previously discussed divergences of views over U.S. nuclear weapons policy and proliferation reverberate directly into the nuclear terrorism discussion.

Keys to Further Unlock the Debate

The goal of this essay has been to understand particular differences in nuclear posture and programmatic debates, as well as lower-level policy differences, in light of strategic divergences over nuclear and foreign policy objectives. Our hope is that this understanding will inform and sharpen the choices to be made among nuclear weapons alternatives during the Obama administration's development of the NPR and the parallel nonproliferation review that will lead up to the 2010 NPT Review Conference in the Spring. Some of these divergences can be framed as questions whose further study could yet bring greater clarity. All of these topics have of course been examined, but some remain insufficiently systematically explored. In particular, it would be valuable to better address the following six issues:

First, whether and how do U.S. nuclear weapons policies, plans, and programs influence other states? At least four groups of states should be examined: nuclear weapon states; states with nuclear weapon ambitions; potential proliferators (both allies and adversaries); and the broader international community.

Second, further technical and political-military analysis on how specific programs, such as BMD and RRW, affect broader nuclear policy goals.

Third, a systematic look at various de-alerting proposals to see which might find broad support in the policy community, and bilaterally with Russia, or conversely which might create crisis instabilities that should be eschewed.

Fourth, a critical and in-depth examination of how the numbers and yields of U.S. nuclear weapons, as well as U.S. use policy, affect dissuasion, deterrence, and assurance of allies.

Fifth, further examination of how programs, policies, or plans contribute to deterring the ways that fissile material could get into the hands of terrorists. Special attention should be given to countries that might wittingly help terrorists attain a nuclear capability.

And finally, an in-depth net assessment of the technical and political opportunities and challenges that lie along President Obama's proposed path toward nuclear weapons elimination, with an analysis of the resulting risks and benefits.

Further clarity on all these issues should help the Obama administration in its efforts to find the wisest path forward in the creation of a new U.S. nuclear weapons policy and posture—one that should enhance the national security of the United States while furthering the goals of the nonproliferation regime.

Further study on six issues could bring greater clarity to these debates.

Notes

1. *National Defense Authorization Act for Fiscal Year 2008*, Public Law 110–181, 110th Cong., 2nd sess. (January 28, 2008), <http://thomas.loc.gov/cgi-bin/bdquery/z?d110:HR04986:@@L&summ2=m&>.
2. We take nuclear “policy” in the U.S. context to concern the role, broadly understood, of nuclear weapons in U.S. national security, “posture” to concern the nuclear weapons and infrastructure characteristics necessary for this role, and “programmatic” to refer to particular choices about weapon and infrastructure programs. In this categorization, nuclear doctrine (meaning the circumstances under which nuclear weapons would or would not be used, and against what targets) is a subset of nuclear policy.
3. See Office of the Press Secretary, The White House, “Remarks by President Barack Obama, Hradcany Square, Prague, Czech Republic,” April 5, 2009, http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/.
4. “National Security Strategy of the United States of America,” September 2002, p. 30, <http://merln.ndu.edu/whitepapers/USnss2002.pdf> (hereinafter *National Security Strategy 2002*).
5. We define “nuclear primacy” with respect to a particular country to mean a situation in which the United States would have the capability of launching a confident and disarming nuclear first strike against that country, such that no retaliation with strategic nuclear forces would be possible. Primacy over an adversary is, therefore, primarily a function of whether that adversary has a survivable second-strike capability. We note that an adversary might still retain the capability, over a longer time period, to retaliate with nuclear warheads delivered without the use of strategic delivery systems (e.g., via smuggling by ship or other method).

6. See Caitlin Talmadge, "Deterring a Nuclear 9/11," *The Washington Quarterly* 30, no. 2 (Spring 2007): 21–34, http://www.twq.com/07spring/docs/07spring_talmadge.pdf.
7. The phrase "rogue regime" is itself a controversial usage. Here we take it to be defined according to the National Security Strategy 2002, 13–14.
8. *Ibid.*, 13–15.
9. In its most restrictive usage, some reserve the word "deterrence" to mean exclusively "deterrence by the threat of punishment," using the word "dissuasion" to encompass "deterrence by denial." At its most expansive, "deterrence" may instead be taken to be anything that alters an adversary's risk–benefit calculation regarding a possible attack. "Dissuasion" certainly encompasses much more than only "deterrence by denial" but is used here also in the sense of shaping potential adversaries' decisions about nuclear doctrine, posture, and investments. Since there is no uniform usage, we include both terms here.
10. "Treaty on the Non-Proliferation of Nuclear Weapons," July 1968, <http://www.fas.org/nuke/control/npt/text/npt2.htm>.
11. It is hard to generalize de-alerting proposals since there are many possible approaches. For example, downloading missile warheads so that they have obtained a nonoperational status has general support and was the approach taken by the Bush administration in fashioning the Moscow Treaty. Differences remain over what size the alert force should be. De-alerting proposals that recommend that most, or perhaps all, of the force be placed in a de-alert status, either through removal and storage of warheads, protecting of missiles, modifying submarine alert status or patrol locations at sea, or deliberately making it more difficult and time-intensive to upload missile targeting information, are examples of particular proposals over which divergence exists.
12. There is a broad range of arms control mechanisms, so it is difficult to speak about arms control as if it were a monolithic approach. As practiced during the Cold War, formal arms control usually had as its aim a reciprocal, mutually binding treaty or agreement that was recognized under both international and domestic law. An example of this would be the Anti-Ballistic Missile Treaty (ABM) or the Strategic Arms Limitation Talks II (SALT II) treaty. These agreements can be distinguished from cooperative actions taken by both sides, such as the Presidential Nuclear Initiatives of the early 1990s or even the Moscow Treaty which, while legally binding, is primarily a political declaration of the intent of the parties to reduce their nuclear forces in accordance with their own policies and plans.
13. See Christopher F. Chyba, "Time for a Systematic Analysis: U.S. Nuclear Weapons and Nuclear Proliferation," *Arms Control Today* 38, no. 10 (December 2008): 24–29.
14. We use CTR here to refer to a broad range of initiatives intended to increase the physical security of nuclear weapons usable material, nuclear weapons know-how, or nuclear weapons themselves. Some efforts with states that have nuclear weapons but have not signed the NPT could possibly conflict with Article I of the NPT, which prohibits nuclear weapon states from assisting other states' nuclear weapons programs.
15. See George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "A World Free of Nuclear Weapons," *Wall Street Journal*, January 4, 2007, p. A15, <http://online.wsj.com/article/SB116787515251566636.html>; George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "Toward a Nuclear-Free World," *Wall Street Journal*, January 15, 2008, p. A13, <http://online.wsj.com/article/SB120036422673589947.html>; George Perkovich and James M. Acton, eds., *Abolishing Nuclear Weapons: A Debate* (Washington, D.C.: Carnegie Endowment for International Peace, 2009), http://www.carnegieendowment.org/files/abolishing_nuclear_weapons_debate.pdf.