

# STRATEGIC ASIA 2013–14

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## ASIA IN THE SECOND NUCLEAR AGE

*Edited by*

Ashley J. Tellis, Abraham M. Denmark, and Travis Tanner

### Overview

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#### No Escape: Managing the Enduring Reality of Nuclear Weapons

*Ashley J. Tellis*

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## EXECUTIVE SUMMARY

This chapter examines the logic of nuclear weapons abolitionism, surveys the contemporary nuclear developments in Asia that are described in this volume, and highlights implications for the U.S. and its ambitions regarding comprehensive nuclear disarmament.

### MAIN ARGUMENT:

Although the emergence of new nuclear powers in the post–Cold War era has triggered fears of widespread nuclear proliferation and renewed calls for nuclear abolition, the pursuit and development of nuclear weapons in Asia are likely to only increase in the years ahead. Continuing interstate competition, along with the expectations of many states that nuclear weapons will enhance their security and offer deterrence value, ensures that regional arsenals will grow. The U.S., therefore, must prepare for a reality that is quite different from the vision offered by nuclear abolitionism: an Asia that hosts many nuclear powers whose arsenals vary in capacity, architecture, and doctrine.

### POLICY IMPLICATIONS:

- Preserving stable deterrence even as the U.S. protects its primacy is the critical obligation facing Washington in the second nuclear age. The U.S. must maintain its deterrent capabilities, which function as the fundamental “backstop” on which the nation’s security, the protection of U.S. allies, and the durability of the global order ultimately depend.
- Washington should carefully consider the quantitative requirements of nuclear sufficiency and extended deterrence. The process of nuclear reductions may be reaching—if it has not already reached—the limits of its success.
- The consequences of forfeiting U.S. nuclear superiority vis-à-vis China for the viability of extended deterrence in Asia require careful consideration.
- Despite budgetary challenges, the U.S. must ensure that its nuclear weaponry, force triad, and production complex, including the necessary human capital, do not diminish in capability.

# No Escape: Managing the Enduring Reality of Nuclear Weapons

*Ashley J. Tellis*

The dream of a world without nuclear weapons has once again seduced Washington. To be sure, this quest dates back to the beginning of the nuclear age. But the threats posed by the Soviet Union during the Cold War, the value of extending deterrence for purposes of limiting proliferation, and the recognition that erasing the knowledge of nuclear weaponry was impossible all combined to compel policymakers to treat nuclear weapons as a permanent feature of international politics. The era of bipolar competition also demonstrated that whatever the anxieties produced by nuclear weapons, they contributed toward preserving the longest peace witnessed in modern European history. Consequently, although the horrific consequences of deterrence failure ensured that the search for alternatives to nuclear weaponry never quite disappeared throughout the Cold War, the absence of more durable antidotes to war essentially settled the issue. U.S. policymakers concluded that nuclear weapons were here to stay, and hence their principal task consisted of ensuring that these capabilities remained perpetually safe, secure, and effective enough to preclude any actual use.

The end of the Cold War drastically reduced the prominence that nuclear weapons had once enjoyed. Although all the established nuclear powers still maintained their strategic arsenals, the demise of the Soviet Union conclusively ended the previously intense nuclear competition. It also

eroded, however, the tacit cooperation between the superpowers, which had helped constrain the rise of new nuclear weapons states. This collaboration had been driven largely by the superpowers' mutual interest in limiting the number of nuclear competitors in order to avoid both catalytic crises and any further diffusion of coercive power in the international system. With the decay of these disciplining benefits of bipolarity, the number of countries acquiring or demonstrating nuclear capabilities slowly increased. This evolution has renewed fears that the *arrivistes* will engender—through emulation or reaction—further proliferation in the years to come.

One influential scholar, Paul Bracken, has argued that these trends constitute nothing less than a “second nuclear age,”<sup>1</sup> an era defined by all the instabilities that theorists had long feared would attend nuclear multipolarity. In particular, Bracken notes that the principal achievement of the Cold War—the absence of nuclear weapons use despite intense geopolitical competition—is now at risk. The emergence of many new nuclear states magnifies the problems of stability that were once better contained because they were limited to mainly two states, or at most only a few. Moreover, many of the new nuclear powers are neither wealthy nor overly sophisticated, raising unsettling questions about whether they have the requisite resources to maintain the surety and safety of their strategic assets. Finally, as other scholars have argued, many of the new nuclear nations may lack the cold instrumental rationality that previously defined the nuclear competition between the United States and the Soviet Union, which, if true, could considerably magnify the challenges of achieving stable deterrence.<sup>2</sup>

Whatever the veracity of these conclusions, the emergence of new nuclear powers in the post–Cold War era has triggered fresh fears that the international system might be on the cusp of a cascade of proliferation. Because such a development would acutely stress the stability of deterrence worldwide, many individuals who might have otherwise focused on the challenges of managing stability have now shifted entirely to the pursuit of nuclear abolition. Among the most prominent of these has been the so-called Gang of Four—Henry Kissinger, George Shultz, William Perry, and Sam Nunn—erstwhile Cold Warriors, who in 2007 published the first of several articles highlighting the importance of “reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation

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<sup>1</sup> Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: Times Books, 2012), 3.

<sup>2</sup> For a useful review of these arguments, see Peter R. Lavoy, “The Strategic Consequences of Nuclear Proliferation: A Review Essay,” *Security Studies* 4, no. 4 (1995): 695–753.

into potentially dangerous hands, and ultimately ending them as a threat to the world.”<sup>3</sup>

While this initiative evoked controversy for many understandable reasons, the vision it advanced received dramatic impetus when two years later President Barack Obama declared his support for the utopian objective of seeking “the peace and security of a world without nuclear weapons.”<sup>4</sup> Although all previous U.S. presidents since Richard Nixon had declared fealty to the aspiration of pursuing comprehensive nuclear disarmament—the ambition memorialized in Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)—Obama for the first time committed the United States to an abolitionist agenda that seeks not simply to eliminate nuclear weaponry but rather to transform international politics itself in a way that causes these weapons to fundamentally lose their relevance.<sup>5</sup>

This chapter reviews the logic of abolitionism in the context of contemporary nuclear developments in Asia. Toward that end, it is divided into three sections. The first part examines the arguments for nuclear abolition and assesses whether this agenda, now pursued by the United States, might resolve various contemporary challenges in regard to nuclear proliferation. The second part surveys contemporary developments in Asia, as detailed in this volume of the *Strategic Asia* series, and concludes that the current nuclear effervescence in Asia ensures that nuclear weapons will be durably employed in the most important sub-system of global politics for a long time to come. Finally, the third part highlights what nuclear developments in Asia imply for the United States and its ambitions regarding comprehensive nuclear disarmament.

## Is “Zero” the Solution to Nuclear Proliferation?

The current pursuit of nuclear abolition is driven largely by fears that continued proliferation will likely end up in a catastrophe of unprecedented magnitude. Kissinger, Shultz, Perry, and Nunn, for example, have repeatedly argued that “reliance on nuclear weapons for... [deterrence]... is becoming increasingly hazardous and decreasingly effective”; that “the likelihood that non-state terrorists will get their hands on nuclear weaponry is increasing”; and that “with the spread of nuclear weapons, technology, materials and

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<sup>3</sup> George P. Shultz et al., “A World Free of Nuclear Weapons,” *Wall Street Journal*, January 4, 2007.

<sup>4</sup> Barack Obama, “Remarks by President Barack Obama” (remarks at Hradčany Square, Prague, April 5, 2009).

<sup>5</sup> In addition to the Prague speech referenced above, see Barack Obama, “A Just and Lasting Peace” (Nobel Lecture, Oslo, December 10, 2009); and Barack Obama, “Remarks by President Obama at the Brandenburg Gate” (speech, Berlin, June 19, 2013).

know-how, there is an increasing risk that nuclear weapons will be used.”<sup>6</sup> While these claims are debatable, they do not clarify how exactly abolition would produce a better peace beyond the assertion that if nuclear weapons cease to exist, then, by definition, the dangers arising from their presence would cease to exist as well.

To the degree that a positive logic obtains, it often has to be read into claims that are diffuse. The best argument that has been proffered for the benefits of abolition—which is not to say that it is necessarily a good argument—is that nuclear disarmament would reduce the incentives of currently non-nuclear states to acquire nuclear weapons themselves. This claim essentially hinges on the belief that if the existing nuclear powers were to give up their nuclear weaponry, they would eliminate a key source of threat that might be experienced by other states, thereby arresting the momentum toward further proliferation. The legal variant of this idea is anchored in the expectation that if the established nuclear states demonstrate credible progress toward denuclearization, ending ultimately with abolition, they will have fulfilled their Article VI commitments under the NPT. By doing so, established nuclear states will have denied the non-nuclear states any incentives to rethink their own obligations not to acquire nuclear weaponry.

While claims made on these expectations are plausible, they are ultimately not persuasive. The assertion that the current nuclear powers would reduce the intensity of the threats felt by non-nuclear states if they divested themselves of their nuclear arsenals is tenable only if all nations seeking nuclear weaponry did so because they were threatened by other states possessing nuclear weapons. The evidence in many cases, however, suggests otherwise. Because nuclear weapons are such splendid instruments of politics, the motivations for acquiring them are not surprisingly quite diverse: some nations may seek nuclear weapons as an antidote to conventional threats, not necessarily nuclear ones; other states could be moved to acquire nuclear capabilities to bolster the survival of their governing regimes versus various internal challengers or as instruments of strategic bargaining vis-à-vis the larger international system; and still others may seek nuclear weaponry in order to demonstrate technological sophistication or achieve national prestige, considerations that have little to do with external threats. The expectation that forgoing nuclear weaponry would thus inexorably stymie further proliferation therefore may be optimistic. This conclusion is corroborated by the fact that the world’s largest nuclear arsenals have been

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<sup>6</sup> Shultz et al., “A World Free of Nuclear Weapons”; and George P. Shultz et al., “Deterrence in the Age of Nuclear Proliferation,” *Wall Street Journal*, March 7, 2011.

progressively contracting in size without much impact on the proliferation trends so feared by the advocates of abolition.<sup>7</sup>

In this context, the contention that an elimination of nuclear weapons is necessary for the P5 countries (the five permanent members of the UN Security Council) to authenticate their Article VI obligations under the NPT is both spurious and dangerous: it is spurious because, contrary to what non-nuclear weapon states may now insist, the NPT does not entail any bargain whereby the recognized nuclear powers would give up their arsenals as the price for non-nuclear states continuing to eschew the acquisition of nuclear weapons; and it is dangerous because the continued assertion of such a linkage not only obfuscates the negotiating record leading up to the NPT but also, and more importantly, entrenches false expectations about an untenable end state that cannot be realized without engendering perhaps even greater hazards to international peace.<sup>8</sup> The best that can be said about the political value of denuclearization, therefore, is that continued progress here may provide the established nuclear powers with greater legitimacy in the context of their crusades against nuclear proliferation. Progress toward denuclearization arguably strengthens the perception that the nuclear weapons states occupy “the moral high ground” if their campaigns against incipient proliferators unfold against the backdrop of compliance with their own undertaking to one day eliminate nuclear weaponry.<sup>9</sup>

If one version of the consequentialist argument for nuclear abolition—reducing the incentives of non-nuclear states to acquire nuclear weapons—fails on both logical and empirical grounds, a second version, which argues the imperative because of fears that nuclear use will be more likely in the future, unfortunately does not fare much better. To the degree that this claim entails more than the simple probabilistic expectation that the risks of nuclear use rise as the number of nuclear weapon states increases, it appears in the writings of the Gang of Four and others in three different versions. Sometimes it materializes in the following assertion:

It is far from certain that we can successfully replicate the old Soviet-American “mutually assured destruction” with an increasing number of potential nuclear enemies world-wide without dramatically increasing the risk that nuclear weapons will be used. New nuclear states do not have the benefit of years of step-by-step safeguards put in effect during the Cold War to prevent nuclear accidents, misjudgments or unauthorized launches. The United States and the

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<sup>7</sup> Robert S. Norris and Hans M. Kristensen, “Global Nuclear Weapons Inventories, 1945–2010,” *Bulletin of the Atomic Scientists* 66, no. 4 (2010): 77–83.

<sup>8</sup> Christopher A. Ford, “Debating Disarmament: Interpreting Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,” *Nonproliferation Review* 14, no. 3 (2007): 401–28.

<sup>9</sup> Michael E. O’Hanlon, *A Skeptic’s Case for Nuclear Disarmament* (Washington, D.C.: Brookings Institution Press, 2010), 3.

Soviet Union learned from mistakes that were less than fatal. Both countries were diligent to ensure that no nuclear weapon was used during the Cold War by design or by accident. Will new nuclear nations and the world be as fortunate in the next 50 years as we were during the Cold War?<sup>10</sup>

At other times, the claim is manifested in fears that “in today’s war waged on world order by terrorists, nuclear weapons are the ultimate means of mass devastation.”<sup>11</sup> And finally, and most intriguingly, the fear of prospective deterrence failure is attributed to the rise of new warfighting phenomenologies, such as cyberwarfare, which “could have disastrous consequences if the command-and-control systems of any nuclear weapons state were compromised by mischievous or hostile hackers.”<sup>12</sup>

The first argument in this group of claims essentially derives from the anxiety that the emerging nuclear powers will not be able to develop and maintain, for either financial or technological reasons, all the safeguards that the two superpowers slowly and assiduously put in place during their lengthy Cold War. This suspicion may well turn out to be true. But to infer from this the increased likelihood of inadvertent, mistaken, or accidental nuclear use is premature, because the argument fails to take into account the radically different nuclear postures maintained by emerging proliferators in contrast with the superpowers. Because the new nuclear states have as a rule not configured their arsenals either for nuclear warfighting or for the conduct of prompt operations, the dangers of unintentional nuclear use are quite different from the challenges the United States and the Soviet Union faced from each other.<sup>13</sup> Even if this were not the case, however, it is highly unlikely that the emerging nuclear powers would give up their arsenals simply because of the presence of such dangers—so long as nuclear weapons are perceived to be essential to either national security or regime survival. In the face of such necessities, no modern-day proliferant would sacrifice the benefits of nuclear possession merely to avoid its accompanying risks, no matter what any other nation did in regard to eliminating nuclear weaponry.

As arguments for abolition, threats of nuclear terrorism do not appear to be particularly persuasive either. Despite the empirical evidence for terrorist groups seeking nuclear weapons being unclear, the dangers pertaining to nuclear security must be addressed seriously. Any state that possesses nuclear weapons would recognize the need to protect these capabilities as being in

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<sup>10</sup> Shultz et al., “A World Free of Nuclear Weapons.”

<sup>11</sup> Ibid.

<sup>12</sup> George P. Shultz et al., “Toward a Nuclear-Free World,” *Wall Street Journal*, January 15, 2008.

<sup>13</sup> Jordan Seng, “Less Is More: Command and Control Advantages of Minor Nuclear States,” *Security Studies* 6, no. 4 (1997): 50–92.

its own self-interest.<sup>14</sup> If there are exceptions to this rule, these challenges must be addressed through diplomacy, technical and financial assistance, and even coercion if necessary. But, again, it is unlikely that the dangers of terrorist access to nuclear weapons can be extinguished by attempting to abolish these capabilities because none of the possessor states would accept such a solution as long as nuclear weapons continue to serve critical purposes of high politics.

A similar conclusion obtains regarding the dangers posed by new warfighting phenomenologies. The challenges of maintaining stable deterrence have undoubtedly become more complex over time, but the threats posed by cyberwarfare and the like are a continuation of the problems faced by the superpowers during the Cold War. The rise of cybertechnology today admittedly intensifies the hazard of “catalytic war”—a crisis between two powers caused by “the mischief-making of some third party”<sup>15</sup>—but all nuclear weapon states will respond to this threat by strengthening their command-and-control systems against external intrusion. No matter how effective these actions may be, nuclear weapons states are more likely to emphasize such investments, given the value of nuclear weapons to their national strategies, than they are to abandon these crown jewels merely because of uncertain dangers that lurk in the international system.

The critical problem with abolition as a solution to all these nuclear risks is not that the hazards highlighted by its advocates are unreal. Any failure of deterrence that results in mass casualties would undoubtedly be horrific. But the presence of such perils does not by itself inevitably produce these unnerving consequences. As the theorists and moralists of yesteryear understood all too well, the use of nuclear weapons in an interstate context has been avoided—no matter the number of nuclear powers or the infirmities of their arsenals—because, when all is said and done, the scary effects of any nuclear employment concentrate the mind in a way that few other instruments of war can. Nuclear dangers associated with nonstate actors are admittedly not susceptible to similar discipline. Yet precisely because their human and political consequences can be just as devastating as interstate nuclear war, state managers are likely to be extraordinarily careful where control of their nuclear assets is concerned, given that they (and their countries) could pay a high price for any negligence that produces nuclear devastation. This same calculus also helps limit the risks posed by different forms of nuclear accidents.

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<sup>14</sup> Keir A. Lieber and Daryl G. Press, “Why States Won’t Give Nuclear Weapons to Terrorists,” *International Security* 38, no. 1 (2013): 80–104.

<sup>15</sup> Arthur L. Burns, “The Rationale of Catalytic War,” Princeton University, Center of International Studies, Research Monograph, no. 3, 1959, 4.

None of these conclusions hold with certitude, however. The abolitionists are right to emphasize that even the best system of nuclear deterrence is afflicted by various risks that make perpetual success uncertain. But what is most troublesome about their solution—the complete and irrevocable elimination of all atomic weapons—is that for all the infirmities of nuclear deterrence, its deliberate excision could prove to be just as problematic for assuring international peace and security. After all, the pre-nuclear era also witnessed mass carnage on an unbelievable scale. And so long as the deep structure of global politics continues to be defined by an unrelenting struggle for power among states, there is every likelihood that the elimination of nuclear weapons would only end up making the world safe for conventional war—with the gargantuan casualties that would inevitably result, albeit over longer durations. Recognizing just this fact, one perceptive analysis concluded that “the apparent robustness of nuclear deterrence over the decades presents a high threshold for any alternative that seeks to replace it. Embracing an alternative, therefore, requires highly favorable assessments of its effectiveness,”<sup>16</sup> which is something that no advocate of nuclear elimination, or for that matter any other alternative to nuclear deterrence, has yet been able to demonstrate.

What complicates things further is that the abolition of nuclear weapons, even if it could be achieved, may not subsist as a permanent condition because the sheer potency of these instruments would constantly tempt states to recreate them. As Thomas Schelling once insightfully noted, because the knowledge of nuclear weaponry cannot be erased, a world of former nuclear powers would be little other than a world of latent nuclear powers.<sup>17</sup> Given the continuing rivalries of international politics, previous nuclear arms races would be replaced by new sprints to breakout because whichever state succeeded in reconstituting a nuclear arsenal first would have tremendous advantages with respect to either blackmailing its rivals or preemptively destroying their nuclear infrastructure. If these are some of the instabilities that would ensue, even a successful elimination of nuclear arsenals globally would not provide the “increasing measure of assured security for all nations” that the advocates of nuclear abolition otherwise sensibly seek.<sup>18</sup>

The last argument for eliminating nuclear weapons comes from a radically different direction and is driven by the recognition that these instruments remain the final handicap preventing the United States from being able to project its power effortlessly against various adversaries. This

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<sup>16</sup> Dallas Boyd and James Scouras, “Escape from Nuclear Deterrence: Lessons for Global Zero from the Strategic Defense Initiative,” *Nonproliferation Review* 20, no. 2 (2013): 348.

<sup>17</sup> Thomas C. Schelling, “A World Without Nuclear Weapons?” *Daedalus* 138, no. 4 (2009): 126.

<sup>18</sup> Shultz et al., “Deterrence in the Age of Nuclear Proliferation.”

argument for abolition is not driven by concerns about international stability or the risks to world peace. Rather, it arises from a purposive calculation of what stands in the way of entrenching American hegemony globally and, as such, constitutes an imperialist justification for nuclear disarmament. At its core, it is grounded in three critical insights. First, although the United States possesses the most puissant nuclear arsenal in comparison with all other nations, the differences in the relative sophistication of various nuclear weapons do not yield greater-than-proportionate political benefits in comparison with their absolute performance. As a result, no matter how technologically innovative the U.S. nuclear weapons complex may be, it cannot produce weapons that allow Washington to freely neutralize the strategic reserves of its rivals. Second, the enormous damage that even small numbers of relatively primitive nuclear weapons can inflict in highly compressed timeframes makes them far more effective as defensive instruments of deterrence than as offensive instruments of warfighting. This implies, from a political rather than a technical perspective, that adversaries possessing even simple nuclear weapons can prevent the United States from applying coercive power against them far more effectively than the United States can employ its sophisticated nuclear weapons to neutralize their deterrents. Third, and finally, the growing effectiveness of many conventional weapons in the U.S. arsenal now permits the United States to substitute these capabilities in many (though not all) missions that previously could be executed only by nuclear weapons. As such, its need to procure nuclear weapons for many combat missions has become less pressing.

These three insights combine to argue for the comprehensive elimination of all nuclear weapons worldwide because these capabilities alone, in the possession of others, stand between the United States and its ability to apply military power against various adversaries successfully. As Secretary of Defense Les Aspin argued in 1993, “nuclear weapons can still be the equalizer against superior conventional forces. But today it is the United States that has unmatched conventional military power, and it is our potential adversaries who may attain nuclear weapons. We’re the ones who could wind up being the equalizee.”<sup>19</sup> Given this reality, a world without nuclear weapons would indeed be a world where U.S. power could be projected with impunity—and hence nuclear abolition ought to be a goal pursued by the United States resolutely and with alacrity.

There is much that is appealing in this rationale for nuclear disarmament from the viewpoint of U.S. interests. But what makes it so utterly attractive to the United States is exactly what prevents it from being actualized: the

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<sup>19</sup> Les Aspin, “The Counterproliferation Initiative” (speech at the National Academy of Sciences, Washington, D.C., December 7, 1993).

stake that all other nations have in avoiding victimization by Washington. Because they recognize that they would be severely disadvantaged vis-à-vis conventional U.S. military power, which is likely to remain unchallenged for some time to come, both the peer competitors of the United States and its weaker adversaries are certain to reject its entreaties for comprehensive denuclearization. Whatever the benefits to international peace accruing from such an outcome, the dangers to these states' particular interests are exceptionally high. As a result, they are unlikely to contribute toward achieving a nuclear-free world, even if their rhetoric sometimes hews to the contrary. Thus, even the most attractive justification for nuclear disarmament from the perspective of the United States ends up with little chance of being fructified.

This pessimistic assessment of the prospects of nuclear abolition should not come as a surprise to U.S. policymakers; hence, it is indeed odd that statesmen like the Gang of Four and leaders like President Obama nonetheless peddle such escapist solutions at this juncture in international politics. Clearly, they have been moved greatly by their fears of the dangers ensuing from further proliferation. The desire to secure legitimacy for the U.S. campaigns against emerging nuclear states such as North Korea and Iran has provided further motivation, while the president's own yearning to buttress his legacy as a transformational figure has probably provided some impetus for his support of this utopian goal. But whatever the motivations may be, the fact remains that a genuine "global zero," understood as a world without nuclear weapons, not only is unattainable right now and may never be realized in the future but also, and more importantly, should not be pursued so long as the deep ordering principles of international politics remain unchanged. To chase such a chimera amid continuing interstate competition and the prospect of more nuclear powers worldwide is more than merely a fool's errand; it is actually a dangerous distraction from the more urgent tasks of ensuring that nuclear weapons remain reliable, survivable, safe, and secure—and thereby preclude actual use.

Attending to these tasks requires greater attention to the more mundane elements laid out both in Obama's visionary speech in Prague, such as securing fissile materials, revamping the architecture of international civilian nuclear cooperation, and strengthening the NPT, and in the Gang of Four's manifestos, such as reducing alert rates of existing nuclear forces, creating international nuclear fuel banks, and phasing out highly enriched uranium from civil commerce and research facilities. Even more importantly, however, it requires renewed focus on U.S. deterrent capabilities because, although these remain largely outside the public eye, they nevertheless still function as the fundamental "backstop" on which the nation's security, the protection

of U.S. allies, and the durability of the global order ultimately depends. There is growing evidence that the lack of attention to the U.S. nuclear arsenal has spawned unsettling problems in many areas, ranging from the health of the production complex to the management of the weapons themselves. This is all the more critical because, as the evidence in this volume summarizes, nuclear weapons will remain a growth industry in large quadrants of Asia for quite some time to come.

## Nuclear Weapons Are Alive and Well and Thriving in Asia

This volume of *Strategic Asia* examines the role of nuclear weapons in the grand strategies of key Asian states and their impact on regional and international stability. Although previous editions have touched on nuclear weapons, this is the first time since the inception of the series that an entire volume has been dedicated to reviewing the character and impact of various Asian nuclear programs.

The reasons for this interest are almost self-explanatory. The challenges posed by the nuclear programs in North Korea and Iran in recent years have highlighted the problems confronting the global nonproliferation regime and especially its centerpiece, the NPT. It is often easy to assume that because this near-universal treaty still enjoys strong international support, all its signatories will consider themselves bound by its obligations in perpetuity. Yet, as Bismarck might have said, “every treaty contain[s] an unwritten clause, *rebus sic stantibus*,”<sup>20</sup> meaning that its responsibilities compel only so long as the original circumstances that justified accession obtain. The North Korean and Iranian cases demonstrate all too clearly the limitations of legal fundamentalism, drawing attention instead to the centrality of power politics. Whatever pledge may once have been made to eschew nuclear weapons, a state will embark on a quest to acquire them if it believes that their possession promises to improve its security.

Because no nation can predict how its future strategic environment might change, promises to forgo nuclear weapons recorded in the NPT will always be contingent assurances. Breaking such solemn commitments is invariably a costly act; hence, it is unlikely that states will do so unless they judge the gains to be worth the consequent aggravations. The United States and the international community more generally should, therefore, strengthen the legal instruments of nonproliferation to the degree possible because they help deter casual exits from the NPT. But these actions must

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<sup>20</sup> A.J.P. Taylor, *Bismarck: The Man and the Statesman* (New York: Vintage Books, 1967), 192.

be implemented without any illusions that even such successful treaties will suffice to keep countries from acquiring nuclear capabilities if their supreme national interests demand otherwise.

Given the contested geopolitics of Asia, which is defined by several enduring rivalries, many unresolved territorial disputes, significant local power transitions, and now the continent-wide anxieties provoked by the rise of China, it is not surprising that nuclear weapons have retained their critical importance thanks to their unique capacity to inflict “high-leverage strategic harm” unmatched by any other kind of military instrument.<sup>21</sup> Nuclear weapons can inflict enormous destruction in a very short period of time; they can threaten the vital concentrations of an adversary’s national capabilities, even in the presence of effective frontier defenses; their efficacy, for the most part, does not hinge on their relative sophistication, even if a competitor possesses comparable capabilities; their susceptibility to successful defense is low; and the ease with which they can be tailored to achieve specific operational effects is higher than other weapons of mass destruction. All these attributes combine to make nuclear weapons splendid instruments of deterrence, tools that undermine the hierarchy of international power insofar as their comparatively low costs enable even weaker states to effectively defend themselves against otherwise more powerful rivals.

While the importance of nuclear weapons has receded in Europe—the cockpit of the Cold War—Asia’s continuing economic dynamism, which now makes it the center of gravity in the global system, has produced a renewed interest in nuclear weaponry. Many of the states in the region have come to view these devices as indispensable for the preservation of their security. Uncertainties over the future of U.S. hegemony and, by implication, the reliability of U.S. extended deterrence only perpetuate the interest in nuclear weapons in various quarters of Asia, including in countries that have formally renounced the acquisition of these instruments but nonetheless possess sufficient latent capabilities to permit their rapid procurement should circumstances demand.

At least in Asia, therefore, the bold vision of a world without nuclear weapons—the ambition that Obama articulated in Prague in 2009 and reiterated in Berlin more recently—seems very far away, if not downright evanescent. The myriad nuclear challenges already present attest to that fact. Within the next year, for instance, the United States and its allies will likely have to make some hard decisions about their response to Iran’s evolving nuclear program if a satisfactory diplomatic resolution cannot be reached.

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<sup>21</sup> This concept comes from the testimony and prepared statement of Henry D. Sokolski, *Proliferation and Regional Security in the 1990s*, U.S. Senate, Committee on Governmental Affairs, 101st Congress, 2nd Session, October 9, 1990, 28–41, 65–88.

North Korea's nuclear activities, undertaken in clear violation of Pyongyang's NPT obligations, continue apace, challenging not simply an important component of the global order but equally the security of South Korea and Japan, the most important U.S. treaty allies in East Asia. Fearful of U.S. nuclear superiority, China has embarked on a systematic modernization of its own nuclear arsenal—a development that has spurred an Indian counter-response, which in turn has reinforced many troubling components of Pakistan's own nuclear program. Russia, struck by a continuing economic malaise amid its inextinguishable great-power ambitions, has deepened its dependence on nuclear weapons for security vis-à-vis both the United States and China and is actively exploring new roles for these devices in the context of an ever-evolving warfighting strategy. Even non-nuclear states are not immune to these developments: every major Asian state in this category—Japan, South Korea, Taiwan, and Australia—has enormous latent nuclear capabilities that would permit rapid nuclearization should a political decision be reached to that effect. And even countries that ordinarily would not be imagined as interested in nuclear weapons, such as Saudi Arabia, are now either demonstrating some interest in their acquisition or slowly acquiring the wherewithal that might make their acquisition possible in the distant future.

All in all, then, nuclear weapons in different forms—either in established armories or in latent capacity or in embryonic potential—are alive and well and thriving in Asia. A close look at their presence in the region and their impact on strategic stability, therefore, yields benefits from both a scholarly and a policy perspective. The chapters that appear in this volume are divided into three broad sections: the first part focuses on the programs of “acknowledged” nuclear powers, namely Russia, China, India, and Pakistan; the second part focuses on states with significant “latent” nuclear capacities of different kinds, such as North and South Korea, Iran, and Japan; and the third part contains, as all previous volumes of *Strategic Asia* have done, a special study, this time on the challenges facing U.S. extended deterrence in Asia amid the nuclear transformations occurring elsewhere in the region.

Where the acknowledged nuclear powers are concerned, each country chapter analyzes two broad issues in some detail: (1) the character of the nuclear weapons program at both a technical and a societal level, and (2) the impact of the program on strategic stability in a regional and international context along four specific dimensions whenever possible: deterrence stability, crisis stability, arms-race stability, and political stability, broadly understood to include diplomatic consequences and the prospects for arms control as well as the manipulative utility of nuclear weapons for signaling, escalation, and crisis management.

The structure of the chapters in the second section dealing with latent nuclear powers is slightly different. Here each chapter focuses on three central issues: (1) the nature of latency as manifested in each country's resident national capabilities in the areas of nuclear infrastructure, fissile materials, advanced computation, delivery systems, national research and development infrastructure, and human capital in the nuclear realm, (2) the external and domestic political, strategic, economic, and technological factors that could prompt a potential nuclear power to transform its latent capacity into actual nuclear weapons, and (3) the impact on the regional and global system, to include the nonproliferation regime, of a decision by the particular country to go nuclear.

Taken together, all the chapters collected in this volume confirm the expectation that the reliance on nuclear weapons witnessed in Asia will only increase in the years ahead. This reality not only will stress U.S. deterrent capabilities in challenging ways but also will make the recent calls for nuclear abolition even more anachronistic as an actionable agenda for public policy.

A closer look at the nuclear programs in Asia suggests that, in fact, there are seven different types of relationships where dependence on nuclear weapons is concerned. Of all the countries relevant here, only the United States comes closest to genuinely being a post-nuclear power in that it requires nuclear weapons principally because other states continue to possess them. In most, though not all, cases, Washington could defend its interests through its conventional military capabilities. Hence, more than any Asian state, the United States can—at least in theory—contemplate the divestiture of its nuclear weaponry.

Russia and China, in contrast, remain good examples of established nuclear powers that are highly dependent on nuclear weapons for protecting their security. Accordingly, both maintain arsenals of significant size, diversity, and technological sophistication, although in purely comparative terms Russian nuclear capabilities are larger and more complex than China's.

Of Asia's emerging nuclear powers, Pakistan and the Democratic People's Republic of Korea (DPRK) are likewise highly dependent on nuclear weapons for security. However much outsiders may feel that the sense of threat experienced by these countries is exaggerated, security managers in both states remain utterly convinced that only nuclear weapons stand between them and external domination. Hence, Pakistan and the DPRK are unlikely to ever forgo these capabilities, irrespective of what happens elsewhere in the world.

Odd as it may seem, India, in contrast, is an emerging nuclear power with a low dependence on nuclear weapons because it possesses sufficient conventional military power relative to both its principal adversaries,

Pakistan and China. Even though this balance could deteriorate vis-à-vis the latter, New Delhi feels compelled to maintain its nuclear arsenal more because other states possess these weapons—and hence could subject India to strategic blackmail—and less as instruments of active defense.

The latent nuclear states in Asia are of two kinds as well. The states that are highly dependent on nuclear weapons for security include Iran, Japan, the Republic of Korea, and, with qualifications, Taiwan. Policymakers in all these countries perceive significant nuclear threats to their security, all have the capacity to acquire nuclear weapons if they choose to, and, with the exception of Iran, all rely presently on the extended deterrence provided by the United States in lieu of developing their own arsenals.

Currently, the sole example of an Asian state possessing latent nuclear capabilities, but with an arguably low dependence on nuclear weaponry, is Australia. Thanks to favorable geography and the benefits of U.S. extended deterrence, Australia enjoys the best of both worlds: distance from the most significant threats, yet protection by the globe's most capable power. Should technology or politics ever alter these realities, however, Australia could develop significant nuclear capabilities. The country has a fascinating, though not well-known, history of entanglement with nuclear weapons.

Finally, a large—and growing—number of Asian (to include Middle Eastern) states possess embryonic nuclear potential either because they already have some elements of the nuclear fuel cycle, especially research or power reactors, or because they are embarked on advanced plans to invest in nuclear energy. The United Arab Emirates, Vietnam, Indonesia, and Saudi Arabia are good examples of countries in this category.

The seven detailed studies in this volume elaborate at length on the diversity of the motivations, capabilities, and implications of Asia's nuclear ferment. They leave no doubt that the principal challenge facing the international community will not be nuclear abolition of any kind but rather preserving strategic stability against the backdrop of a rising demand for nuclear weaponry.

Jacob Kipp's assessment of Russia's nuclear capabilities exemplifies this conclusion perfectly. Kipp describes how Moscow's current nuclear arsenal, both in its architecture and its numbers, reflects many of the capabilities it inherited from the Soviet Union. Unlike those heady days, however, when the Soviet nuclear forces and conventional military were at parity with, if not superior to, those of the West, the weakened Russian economy during the last two decades has resulted in a dramatic enervation of the country's conventional forces. This occurs at a time when Moscow still has serious geopolitical disagreements with NATO, and the United States in

particular, while deeply fearing China's rising power despite being unable to acknowledge this apprehension.

In such circumstances, Russia's dependence on nuclear weapons has only intensified. These instruments remain the strongest assurance of its continued great-power status, while providing it with credible protection against the threats posed by new precision-strike weapons that may be employed in tandem with missile defense. Because nuclear weaponry still remains an arena of Russian comparative advantage, this industry continues to receive high budgetary priority, with military planners in Moscow contemplating ever more exotic doctrines for how such arms may be employed in support of Russian interests. Given the importance of nuclear weapons to Russia, its leaders—unsurprisingly—have dismissively rejected all ideas of nuclear abolition and become increasingly resistant to even considering further reductions if advanced conventional weapons, missile defenses, and the arsenals of other nuclear powers are not included in the negotiations.

Jeffery Lewis's study of China's nuclear modernization is in many ways an exercise in contrast. Unlike the Russian arsenal, Beijing's strategic capabilities historically have been small, more primitive technologically, and modest in what they sought to achieve. But these capabilities have nonetheless been just as important to China insofar as they validated its great-power status and simultaneously provided it with a sure last line of defense against multiple, and more powerful, adversaries that to this day include both Russia and the United States. Because security concerns pertaining to the latter have increased recently, while worries about the former have never quite disappeared, China is currently in the midst of a comprehensive program of nuclear modernization, including improvements to its delivery systems, warhead storage facilities, missile bases, and command-and-control network. The size of China's arsenal is increasing as well, and its traditional posture, which centers on fielding de-mated systems, is also likely to undergo a change when the sea-based leg of its deterrent becomes operational.

Accordingly, Lewis notes that China could be on the cusp of a significant transition in how it manages its nuclear arsenal. His analysis suggests, however, that the range of threats Chinese nuclear forces are intended to deter has not decreased. Although coping with U.S. power remains central to Beijing's calculus because of both extant geopolitical disputes and the uncertainties that always accompany potential power transitions, China's nuclear weapons target all its major regional rivals, including Russia, Japan, India, and Vietnam. They also play an important, though not always transparent, role in managing the dispute over Taiwan. Despite its past advocacy of nuclear abolition, therefore, Beijing has effectively deflected this goal by demanding that the larger nuclear powers irreversibly reduce their

inventories before it entertains any ideas of cooperation. When this position is coupled to the possibility that China could in fact become a major rival of the United States—first in Asia and then globally—any dreams of involving Beijing in a campaign for nuclear abolition are certain to fail.

At first sight, the Indian nuclear program shares many similarities with its Chinese counterpart: both weapon stockpiles are relatively small, both are maintained as forces-in-being rather than as ready arsenals intended for prompt operations, both are oriented toward executing primarily punitive deterrence strategies rather than denial campaigns centered on damage limitation, and, today, both nuclear inventories are growing at a relatively measured pace. For all these resemblances, however, China's nuclear deterrent is orders of magnitude more capable than India's because of the greater numbers of weapons and delivery systems deployed, the huge difference in the yield of the largest warheads deployed, the significant disparity in the survivability of Chinese and Indian nuclear forces, and the superior quality of Chinese missilery in comparison with its Indian counterpart.

Gaurav Kampani's chapter in this volume systematically details how Indian policymakers are working feverishly to remedy these limitations in hardware, infrastructure, and procedures. This task has only become more onerous because of the rapid improvements in Beijing's nuclear capability, which are driven by fears of the United States. New Delhi's undertakings are also urgent because Sino-Indian relations are rivalrous at a time when Sino-Pakistani ties are still aimed at limiting India's freedom of action, when Indo-Pakistani security competition persists with high costs for both states, and when Pakistan is continually engaged in a dramatic expansion of its own nuclear weapons program. Although Kampani concludes that India has now put in place an assured destruction capability vis-à-vis Pakistan, the fact that it has a long way to go vis-à-vis China guarantees that Indian policymakers will not be entertaining ideas about nuclear arms control, let alone abolition, any time soon.

Christopher Clary's chapter on Pakistan's nuclear program represents a remarkable case study of how a country beset with grave internal security problems, a fragile economy, sharp social and political divides, and frayed civil-military relations still seeks refuge in nuclear weapons as the ultimate guarantee of national survival. Clary describes in detail the myriad dimensions of Pakistan's galloping nuclear expansion—a distention suggesting that the nation's military leaders believe that only more can be enough where nuclear adequacy is concerned. If the increase in arsenal size were the only issue at stake, the growth of Pakistan's nuclear capabilities would not generate excessive concern as long as these weapons were adequately safeguarded and the nuclear endeavor did not bankrupt the state. But Clary's analysis

indicates that these threats still persist, although perhaps not as grievously as the public discourse might sometimes suggest. Moreover, they are amplified both by the particular direction in which Pakistan's nuclear expansion seems to be evolving and by the military's propensity to exploit nuclear weaponry for the cover they provide in regard to the sub-conventional challenges levied at India.

All these variables combine to produce a vicious circle of debilitating proportions. New Delhi seeks to checkmate Pakistani terrorism by threatening conventional military retaliation, which then provokes Pakistani investments in tactical nuclear weapons, an unfortunate solution gleaned from an overly studious reading of NATO's Cold War strategies. The threats of tactical nuclear use, then, must be backstopped by ever more ambitious theater and strategic weaponry, even though the risks to security increase and the economic burdens on the state are magnified. Whatever the limitations of Islamabad's strategic logic, however, one conclusion obtains clearly: Pakistan is in no danger of giving up its nuclear weapons, irrespective of what India—or, for that matter, any other country—does. The implications for the abolitionist vision should be obvious.

John Park's chapter about nuclear weapons on the Korean Peninsula serves as the perfect transition from acknowledged nuclear states to latent nuclear powers in this volume. Beginning first with North Korea, Park demonstrates that no matter what the DPRK's reasons for pursuing nuclear weapons originally were, these devices have now become a multipurpose instrument for enhancing national security. The weaknesses of the North Korean economy—even when assessed in its own right, let alone in comparison with South Korea—do not permit the regime to sustain an effective conventional military force. Consequently, nuclear weapons become both compensating supplements and straightforward deterrents vis-à-vis multiple adversaries. The DPRK's persisting national economic weakness also ensures that its broader nuclear capabilities remain critical instruments for extorting assistance from the international community and could, in extremis, even be traded abroad, as Pyongyang has already done, for example, with both nuclear reactors and long-range missilery.

The nuclear threats posed by the DPRK obviously affect South Korea directly, the first latent nuclear power examined in this volume. South Korea already possesses substantial nuclear capabilities and has emerged as a world-class exporter of nuclear reactors. It also pursued a nuclear weapons program in the 1970s. Although this effort was terminated under pressure from Washington, the benefits of U.S. extended deterrence seemed to provide adequate compensation for a while. However, the increasing angst in South Korea about the future of U.S. military capacities, Japan's strategic direction,

and the dramatic progress of the DPRK's strategic program has now resulted in large majorities of the South Korean population endorsing the creation of a national nuclear deterrent. Although no shift in this direction is imminent, the case of South Korea only illustrates how the demand for nuclear weapons has not abated in Asia, even among U.S. allies who are otherwise trustworthy partners. If, as Park concludes, the DPRK's nuclear program is certain to expand in multiple directions so long as the current regime remains in power, the prospect of preserving nonproliferation gains in Northeast Asia, let alone securing nuclear abolition, will prove to be increasingly tenuous.

Robert Reardon's chapter on Iran provides ample evidence for why denuclearization in any meaningful sense will forever remain a chimera. Detailing the progress Iran has made in recent years with respect to uranium enrichment, nuclear weaponization, and the development of delivery systems, the chapter leaves little doubt that Iran is genuinely a latent nuclear power possessing all the capabilities that would permit it to cross the threshold quickly if and when it decides to do so. Because Iranian leaders have judged that possessing the capacity to build nuclear weapons serves their strategic interests just as efficaciously for now as actually building them, Reardon concludes that the regime will aim mainly to shorten the time to breakout: Iran will subsist just at the nuclear threshold for as long as is necessary, remaining in formal and arguably sufficient compliance with its NPT obligations principally to avoid any military attack by the United States. The ability to sustain such a posture indefinitely—where a state acquires the wherewithal to develop a nuclear arsenal but chooses not to fabricate one—highlights the weakness of the abolitionist agenda. It demonstrates how a country can exploit the virtual existence of nuclear weapons to secure political benefits even when the material artifacts themselves do not exist as such. It also serves as a potent example for the East Asian states that might one day seek the protection of nuclear capabilities without actually having to take the final step of actually fabricating nuclear weapons.

In Iran's case, simply acquiring the capacity to produce nuclear weapons appears to have bolstered the legitimacy of its theocratic rulers and enhanced their survival domestically, despite their failure to demonstrate any other success in economics or governance. It has raised the country's stature in the Persian Gulf and has already sent Iran's neighbors scrambling for new forms of protection. It has unnerved Israel, a technologically formidable rival, and posed difficult strategic quandaries for the United States. A military attack launched by Washington, Reardon argues, would set back the Iranian nuclear program, perhaps considerably, but would not eliminate it, unless the conflict led to the demise of the regime and the emergence of new liberal leaders who placed little value in nuclear weapons. Given Iran's history, sense of destiny,

and fears of its Sunni Arab neighbors, even such an outcome might not produce permanent nuclear abdication. A decision by the United States to let things stand as they are—assuming Israeli acquiescence—would reinforce the idea that even weak powers exuding a whiff of nuclear capability can deter the strong. It would thus lead to greater interest in nuclear weaponry on the part of Iran's neighbors, if for no other reason than to deter Tehran. Either way, Iranian nuclear capabilities look destined to become a durable feature of regional geopolitics in the foreseeable future. At its worst, this outcome would stimulate further nuclear proliferation in the vicinity—to include possibly Egypt, Saudi Arabia, and Turkey—thus making the hope of nuclear abolition even less plausible than it already is.

The question of whether Japan will eventually succumb to acquiring nuclear weapons probably remains the most defining test of the health of the international nonproliferation regime. Being the only victim of nuclear attack in human history, Japan has been a strong champion of nonproliferation—even as it has struggled with the question of whether nuclear weapons should be acquired as a means of protecting its security. At various points in the past, Japan re-examined its early postwar decision to remain a non-nuclear state, but ended up continuing to rely on U.S. security guarantees instead. Even as it did so, however, Japan developed a formidable mastery of the entire fuel cycle, accumulated large quantities of separated plutonium, and nurtured an imposing defense industry capable of producing advanced delivery systems.

This uneasy equilibrium has persisted for many decades, but as Richard Samuels and James Schoff's survey of the current Japanese debate emphasizes, it is simply no longer possible to assume that Tokyo's rejection of nuclear weaponry is indeed a permanent feature of its national security policy. China's ascent as the world's second-largest economy (overtaking Japan in 2010); China's increasing military capabilities and, more importantly, growing ability to deny the United States the freedom to operate along the Asian littorals; the unsettling questions about the credibility of the U.S. nuclear umbrella in the face of Chinese nuclear modernization; and finally, the DPRK's own expanding nuclear capabilities have all combined to increase Japanese doubts about the viability of Japan's nuclear abdication decision. While Samuels and Schoff note that dramatic reversals in Tokyo's policy are currently unlikely, they caution that the U.S. policy of seeking to reassure Japan will face steeper challenges than before. To the degree that U.S. power will continue to diminish even as the security threats to Japan do not promise to disappear, the temptation in Tokyo to seek refuge in nuclear weapons will only intensify, thus putting one more nail in the coffin of global abolition.

The last chapter in this volume, the special study authored by Linton Brooks and Mira Rapp-Hooper, examines the challenges posed to U.S.

extended deterrence in the Asia-Pacific region as a result of the continued problems associated with the second nuclear age. Even when the dangers in South Asia and the greater Middle East are excluded from the analysis, the authors conclude that U.S. extended deterrence in Pacific Asia will be much more challenging than it was during the Cold War because of the difficulties of simultaneously deterring and reassuring adversaries while also protecting allies, all in a stable equilibrium. Although this specific problem materialized and was managed more or less successfully during the competition with the Soviet Union, Brooks and Rapp-Hooper convincingly argue that the current challenge is much more burdensome because of the presence of multiple threats, serious security rivalries among the United States' own regional allies, and the absence of a single unified alliance system in Asia. Moreover, the U.S. competition with China is not yet a rivalry between two relatively satiated powers, as was the case with the Soviet Union after 1962. Rather, the contest with China implicates issues where Beijing is deeply dissatisfied, that impact the survival of the Chinese Communist Party itself, and that involve a rising power that will be progressively harder to deter as its own capabilities increase.

Managing this challenge in a way that does not stimulate further nuclear proliferation in Asia—in this case, among the United States' own allies—will tax the skills of policymakers in Washington. The recommendations offered by Brooks and Rapp-Hooper to aid this effort are utterly sensible and merit close attention because they emphasize the need to avoid unnecessarily changing extant U.S. declaratory policy. They also highlight the importance of preserving the traditional nuclear parity with Russia and maintaining the requisite levels of conventional warfighting capability to achieve success in regional contingencies while not imposing greater demands on U.S. strategic reserves. These efforts should be complemented by various confidence-building measures involving all states. The merit of this approach is that it seeks to buttress extended deterrence in uncertain times. Such a strategy allows the United States' allies to continue benefiting from its protection without the need for radical unilateral solutions, while creating a space for challengers such as China and North Korea to avoid levying more dangerous threats to enhance their security. Although Brooks and Rapp-Hooper are conscious that the approach they recommend will be tested most seriously in the cyber realm and in maritime confrontations short of absolute war, their solution is nonetheless grounded in the critical necessity of managing deterrence rather than in the romantic fantasy of jettisoning it.

## What Does All This Mean for the United States? Dilemmas and Challenges Aplenty

The chapters in this volume demonstrate that the nuclear ferment in Asia is unlikely to subside any time soon. The continuing interstate competition in this part of the world—and the expectation on the part of many states that nuclear weapons will enhance their security against current and future threats—ensures that regional arsenals will grow in the years ahead. As the process continues apace, the likelihood increases that more states will be tempted to consider acquiring these weapons either to neutralize the threats that may be posed by the extant possessors or because their acquisition by others validates the notion that nuclear weapons are in fact excellent deterrents. The United States, therefore, must prepare for a reality that is quite different from the vision offered by nuclear abolitionism: an Asia that hosts many nuclear powers whose arsenals vary in capacity, architecture, and doctrine.<sup>22</sup>

At least in the foreseeable future, the Asian reliance on nuclear weapons will increase. While it is possible, maybe, to slow the growth of some arsenals and in some instances even to procure reversals, the fundamental fact that nuclear weapons will remain embedded in the high politics of Asia, as well as globally, cannot be wished away. That reality, in turn, should stimulate the United States not to further indulge in its daydream of eliminating nuclear weapons but rather to focus more resolutely on the challenges of managing deterrence. However burdensome this approach may be amid the proliferation of new nuclear powers, preserving stable deterrence even as the United States protects its primacy is the critical obligation facing Washington in the second nuclear age. The Obama administration has already promised that “as long as nuclear weapons exist, the United States will maintain a safe, secure and effective arsenal that guarantees the defense of the United States and our allies and partners.”<sup>23</sup> If Washington makes good on this commitment, it may discover that the steps taken toward strengthening deterrence might actually render the hope of abolition even more futile. But that would merely be a recognition of the iron realities of international politics, not a reason to avoid investing in the only approach that can prolong the nuclear peace that has now held for close to 70 years.

The first step in this direction is to recognize clearly that the United States needs nuclear weapons today—and will continue to need them in the

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<sup>22</sup> Bracken, *The Second Nuclear Age*, 189–90.

<sup>23</sup> White House, “Nuclear Weapons Employment Strategy of the United States,” Fact Sheet, June 19, 2013, <http://www.whitehouse.gov/the-press-office/2013/06/19/fact-sheet-nuclear-weapons-employment-strategy-united-states>.

foreseeable future—for multiple reasons. The Obama administration’s 2010 *Nuclear Posture Review* sensibly declared that “the United States will only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners.”<sup>24</sup> Yet this avowal must not be taken to such limits as to justify arguments declaring that “the strategic deterrent should do one thing, and one thing only: prevent the nuclear destruction of the United States by a peer like China or Russia.”<sup>25</sup>

Clearly, deterring the use, and threats of use, of nuclear weapons against U.S. and allied interests will remain a central mission for U.S. nuclear weapons in perpetuity. But their utility in deterring conventional war against the United States and its allies is equally important because no adversary should ever draw the conclusion that attacks on U.S. interests that do not involve nuclear instruments are essentially risk-free—even if Washington has the resources to cope with such dangers through conventional means alone. This is particularly relevant because U.S. allies in many cases may be far from the U.S. conventional reinforcements capable of protecting their core national assets effectively, or because the conventional balance of power in particular geographies may not favor the United States and its allies today or over time. Consequently, deterring even conventional threats by preserving the risk of nuclear escalation remains an important benefit of U.S. nuclear forces and one that must not be discarded, given both the high cost of modern conventional wars and the critical importance of preventing U.S. allies from seeking nuclear weapons as a means of mitigating serious conventional threats.<sup>26</sup>

Finally, U.S. nuclear weapons also play a vital role as tactical warfighting instruments in certain specific, admittedly limited, contingencies. Although most of the traditional combat missions of nuclear weaponry have been taken over by conventional weapons, there are still some targets, such as hardened and deeply buried facilities, that are immune to conventional interdiction. The number of such targets in emerging and established nuclear states is in fact growing. If deterrence successfully prevails—as is to be hoped—attacks on these sites will never become an issue. Yet because only nuclear weapons

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<sup>24</sup> White House, “Nuclear Weapons Employment Strategy of the United States.”

<sup>25</sup> Tom Nichols, “Time to Change America’s Atomic Arsenal,” *Diplomat*, March 14, 2013, <http://thediplomat.com/2013/03/14/time-to-change-americas-atomic-arsenal/?all=true>. For a sophisticated discussion that defends this position broadly, see George Perkovich, “Do Unto Others: Toward a Defensible Nuclear Doctrine,” Carnegie Endowment for International Peace, 2013.

<sup>26</sup> Frank Miller, “Disarmament and Deterrence: A Practitioner’s View,” in *Abolishing Nuclear Weapons: A Debate*, ed. George Perkovich and James M. Acton (Washington, D.C.: Carnegie Endowment for International Peace, 2009), 151.

today and prospectively can hold these targets at risk, their relevance for this mission—in the overall context of avoiding war—cannot be overlooked.<sup>27</sup>

Since nuclear weapons will, therefore, continue to be critical for tasks beyond simply deterring nuclear attacks on, or threats to, the U.S. and allied homelands and U.S. interests more generally, the Obama administration's desire to "reduc[e] the role of nuclear weapons in [U.S.] security strategy"<sup>28</sup> should not extend to promulgating declaratory policies that limit the utility of nuclear weapons for dealing with diverse dangers. In fact, the less said about how the United States might use nuclear weapons, the better. The character of these weapons, and the enormous destructive power they embody, is so well-known that nothing need be said about the circumstances that would trigger their use—except to occasionally reiterate that the United States remains willing to use them when dangers to its interests arise. There is little value in emphasizing that Washington will use nuclear weapons only in narrow circumstances—even if that is in fact the case—because there is no evidence whatsoever that nuclear proliferation among U.S. adversaries is stimulated by the specifics of its declaratory policy. Because the same may not be true of its friends, however, the fruits of silence are particularly golden in this instance. As a general rule, therefore, the desire to reduce the salience of nuclear weapons in world politics should not extend to devaluing the utility of nuclear weapons for deterrence because these instruments will continue to remain the *ultima ratio* in an environment that only promises more, not less, proliferation.<sup>29</sup>

The second task, where protecting deterrence is concerned, is reconsidering the quantitative requirements of nuclear sufficiency.<sup>30</sup> The U.S. nuclear arsenal has been steadily decreasing in size since its peak during the Cold War. This trend is undoubtedly sensible because U.S.-Russian relations are not acutely antagonistic, as they once were, and because both states have realized that their security requirements can be adequately satisfied with smaller numbers of strategic weapons. The fact that both the United States and Russia have reduced their inventories through negotiated agreements has imposed a desirable order on the process, but the process of nuclear

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<sup>27</sup> National Research Council, *Effects of Nuclear Earth-Penetrator and Other Weapons* (Washington, D.C.: National Academies Press, 2005), 30.

<sup>28</sup> White House, "Nuclear Weapons Employment Strategy of the United States."

<sup>29</sup> For an excellent survey of the myriad issues implicated here, especially as they bear on the choices of U.S. allies, see Keith Payne et al., *Nuclear Guarantees, Extended Deterrence, and the Assurance of Allies* (Fairfax: National Institute for Public Policy, 2009).

<sup>30</sup> For useful overviews of this issue, see Amy F. Woolf, "U.S. Strategic Nuclear Forces: Background, Developments, and Issues," Congressional Research Service, CRS Report for Congress, RL33640, June 14, 2013; Glenn C. Buchan et al., *Future Roles of U.S. Nuclear Forces: Implications for U.S. Strategy* (Santa Monica: RAND, 2003); and Ivan Oelrich, "Missions for Nuclear Weapons after the Cold War," Federation of American Scientists, Occasional Paper, no. 3, January 2005.

reductions may be reaching—if it has not reached already—the limits of its success. There is a grave danger that future nuclear reductions may be driven more by the political necessity of advancing the abolitionist agenda than the requirements of ensuring stable deterrence.

To be sure, assessing the appropriate number of nuclear weapons for preserving stability is not an easy task because it implicates both nuclear strategy and the tenor of international relations. During the Cold War, the requirements of sufficiency were driven by the logic of U.S. nuclear strategy, which emphasized damage limitation and, accordingly, resulted in U.S. nuclear forces not only being pegged closely to Soviet force levels but also being tasked fundamentally for counterforce and countermilitary operations. A continued reduction in nuclear force levels—if undertaken as before with reference to Russia alone—could place the United States at a serious disadvantage at a time when Chinese nuclear capabilities are growing in size, sophistication, and survivability.

It is simply not clear whether the prospective force levels desired by the Obama administration, taking into account the president's recently announced willingness to shrink the U.S. inventory of operationally deployed strategic nuclear weapons by up to one-third, would permit the nation to sustain its traditional nuclear strategy centered on damage limitation when the potential Russian and Chinese target sets together are still large and, in the case of the latter, continuing to grow. This issue is academic if nuclear deterrence involving these states is completely stable and the threat of war is irrelevant. If this is so, deeper nuclear reductions of the sort contemplated by the administration have no downside, given that the possibilities of nuclear use are by definition ruled out. If this is not the case, however, and the United States must still prepare for the contingency of nuclear use—no matter how improbable—then the number of nuclear weapons and how they might be used become questions that cannot be avoided.

A low number of nuclear weapons might still produce deterrence stability, but it could require the United States to start targeting adversary populations per se, something Washington never did during the Cold War for sound strategic and moral reasons. If this strategy has to be adopted in the future, its implications ought to be thoroughly analyzed prior to pursuing any further reductions.<sup>31</sup> The separate question of whether deterrence and crisis stability can actually be sustained comfortably in a world of lower numbers—and how far weapon inventories can drop before instabilities

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<sup>31</sup> For a superb analysis that is critical of low numbers and minimum deterrence in general, see Keith B. Payne et al., "Minimum Deterrence: Examining the Evidence," National Institute for Public Policy, 2013. For a contrary view, see James M. Acton, *Deterrence During Disarmament: Deep Nuclear Reductions and International Security*, Adelphi Paper 417 (Abingdon: Routledge, 2011).

arise—also deserves further examination through, among other things, detailed modeling that employs the best classified information about the characteristics of all other countries' weapons systems, their operating regimes, and their target sets. The dangers of the other nuclear states reaching for parity, at least numerically, with declining U.S. and Russian nuclear inventories also needs to be assessed. And, perhaps most importantly, the consequences of forfeiting U.S. nuclear superiority vis-à-vis China for the viability of extended deterrence in Asia require careful consideration. As the analyses in this volume suggest, both Japan and South Korea would be strongly tempted to acquire independent deterrents if the credibility of U.S. nuclear guarantees were to diminish as a result of any functional nuclear parity between Washington and Beijing.<sup>32</sup>

Finally, the larger question of whether further nuclear reductions by the United States—unilaterally, bilaterally, or as part of some larger collaborative process with other nuclear states—will ever extinguish the incentives for proliferation in a competitive international system merits some reflection. If the relationship between nuclear arms control and dampening proliferation is only tenuous, because at least some states might consider acquiring nuclear weapons for reasons that have nothing to do with whether the extant nuclear states maintain or forsake their weapons, then the entire endeavor of nuclear reductions for its own sake becomes questionable, nay even dangerous. If future efforts in this direction are pursued by Washington, they should be attempted only because they yield gains for strengthening deterrence and not as part of any quest for nuclear abolition.

The third task facing the United States in regard to managing deterrence is ensuring that its nuclear weaponry retains integrity over an indefinite future. It should be abundantly clear that, despite the aspirations of abolition, few, if any, nuclear states today appear ready to give up their strategic capabilities. Assuring the perpetual effectiveness of the U.S. arsenal is therefore critical because it remains the foundation for preventing both nuclear weapons threats and the dangers of consequential aggression from materializing.

Protecting the survivability and the flexibility of the U.S. nuclear deterrent force is the first step in this direction. Although the idea of eliminating one or more legs of the strategic triad has been aired in recent years, the temptation to do so must be eschewed because these three combat arms—the land-based missile force, ballistic missile submarines, and bombers—have complementary strengths and weaknesses that fortify deterrence *in toto*. Even

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<sup>32</sup> For a different, but corroborating, analysis of this conclusion, see Kurt M. Campbell and Robert J. Einhorn, "Avoiding the Tipping Point: Concluding Observations," in *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, ed. Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss (Washington, D.C.: Brookings Institution, 2004), 321ff.

if further nuclear reductions are justified, the triad should be preserved not simply to ensure the survivability of the force as a whole (especially against a sophisticated peer like Russia) but because it provides Washington with enormous flexibility in coping with a nuclear environment that will be characterized by diverse sources and types of threats.

The biggest challenge to the viability of the triad today is probably less ideational than budgetary. It is hard to prove that the United States could preserve its deterrence options just as effectively if it were to lose one leg of the nuclear force, but finding the resources to sustain comprehensive modernization of what is an aging deterrent is another matter. And the deterrent is indeed old: the mainstay of the land-based force, the Minuteman III intercontinental ballistic missile, for example, entered service in the 1970s; the first of the Ohio-class nuclear-powered ballistic missile submarines entered service in 1985; and the B-52 bomber, which is the workhorse of the triad's air leg, dates back to the 1960s. Although all these systems and their other stable mates have been repeatedly modernized, it is clear that they will all need to be replaced during the next two decades at a price tag of hundreds of billions of dollars—when resources are scarce and the competition from new threats, such as cyber and space, remains unabated.<sup>33</sup>

The challenges of modernizing the triad are complemented by another equally vexatious problem, namely assuring the reliability of U.S. nuclear warheads in perpetuity without further “hot” testing. The tension between attempting to limit proliferation while simultaneously preserving the effectiveness of the nuclear deterrent comes most clearly to a head on this issue and is embodied by the debate about ratifying the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Washington pursued the CTBT on the expectation that the United States would be able to assure the reliability of its nuclear warheads without having to explosively test them again. The accumulated knowledge of nuclear weapons acquired over decades of testing, the availability of high-speed computers to run detailed simulations, the possibility of sub-critical tests, and the presumption that the aging components of stockpiled weapons could be replicated and replaced by high-fidelity substitutes without reducing their effectiveness, all combined (along with other assumptions) to justify the belief that the U.S. stockpile would be reliable even if it were not validated through periodic underground detonations.<sup>34</sup>

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<sup>33</sup> Megan Scully, “The New Nuclear Age,” *CQ Weekly*, March 3, 2012.

<sup>34</sup> Rose Gottemoeller, “The Last U.S. Nuclear Test—20 Years Later: Status and Prospects for the Comprehensive Test Ban Treaty” (speech at the Center for International and Strategic Studies, Washington, D.C., September 27, 2012).

The confidence of these science-based assessments, however, seems questionable for many reasons, including because the interaction effects of the modifications made to individual subsystems of a nuclear weapon during its life extension program are not well understood and hence cannot be modeled with confidence. As the JASON panel of independent scientists reviewing this and other issues concluded,

Unfortunately, we do not know to what extent the performance of nuclear weapons is non-deterministic. There are no homogeneous series of tests, and the occasional significant deviation from expectation is as plausibly the result of a deterministic process as of indeterminacy. On the other hand, indeterminacy is important, because it may pose the ultimate limit to reliability.<sup>35</sup>

Doubts about stockpile reliability will likely increase over time, despite its importance given that continued proliferation is certain. Hence, U.S. policymakers should re-examine their past rejection of the Reliable Replacement Warhead if the country still stands by, as it should, a theory of deterrence centered on the certainty of effective retaliation. Equally important is the need to rethink how the United States proceeds with respect to ratification of the CTBT. Considering all the uncertainties, the optimal course of action for the United States today would be to avoid ratification of this treaty, while hewing to its obligations for as long as is necessary. There is already a *de facto* global moratorium on explosive testing, in part because of the national decisions made by all nuclear states save North Korea. Washington, accordingly, should commit to upholding its CTBT obligations, but without encumbering itself by cementing this commitment—even though abjuring these restraints is possible under *force majeure*—until it is certain beyond reasonable doubt that the reliability of the U.S. nuclear stockpile is assured despite whatever changes may likely occur in regard to proliferation or nuclear inventories elsewhere.<sup>36</sup>

The importance of preserving the integrity of the U.S. nuclear deterrent in an uncertain future, where the only certain trend promises to be further proliferation, also highlights the importance of preserving the U.S. nuclear weapons production complex and, particularly, the human capital—the scientists and the engineers with a specialty in nuclear weapons design and fabrication—which turns out to be the most precarious resource of all.<sup>37</sup>

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<sup>35</sup> D. Eardley et al., “Quantification of Margins and Uncertainties (QMU),” MITRE Corporation, JASON Program Office, March 2005, 13.

<sup>36</sup> Kathleen Bailey and Thomas Scheber, “The Comprehensive Test Ban Treaty: An Assessment of the Benefits, Costs, and Risks,” National Institute for Public Policy, 2011, <http://www.nipp.org/CTBT%203.11.11%20electronic%20version.pdf>.

<sup>37</sup> U.S. Department of Defense, *Nuclear Posture Review Report* (Washington, D.C., April 2010), 40–43, <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf>.

Unfortunately, the history of the last decade does not inspire confidence on this front. Critical facilities essential to the manufacture of nuclear weapons are languishing for either budgetary reasons or a lack of strategic direction—and the environmental hazards at many of these sites still persist. The personnel associated with the development of current U.S. nuclear warheads are slowly retiring and will probably exit the nuclear weapons development complex entirely by the end of this decade. Further, the National Nuclear Security Administration, the nodal body that oversees U.S. nuclear weapons for the Department of Energy, is still hobbled by troubling management and oversight deficiencies.<sup>38</sup> The bottom line, therefore, is stark but should not be controversial: the ability of the United States to maintain a reliable and effective nuclear deterrent indefinitely into the future is compromised by the shortcoming of its nuclear complex. Unless determined efforts are made to redress these weaknesses, the country could end up functionally disarming itself in circumstances where other states would still possess nuclear weapons.

## Conclusion

The perils of nuclear proliferation, which will probably continue unabated, understandably drive the current enthusiasm for abolishing all nuclear weaponry. The studies in this volume suggest, however, that active security competition still persists in Asia, the new locus of power in the emerging world system. There is no evidence whatsoever that interstate rivalries are vanishing either here or elsewhere in international politics. Consequently, the quest to eliminate nuclear weapons—a dream that goes back to the beginning of the nuclear age but which has now been adopted as U.S. policy by President Obama—will likely fail. As even the most ardent advocates of abolition realize, the eradication of nuclear weaponry cannot obtain without a fundamental transformation in the character of politics in the earthly city. The pervasiveness of conflict, which characterizes all aspects of human interaction and social structure, will have to disappear first before abolition becomes viable precisely because nuclear weapons are such extraordinary instruments of violence. To imagine that conflict can be eradicated within history, however, is utopian, and eliminating nuclear weapons in its pursuit could end up making the cure worse than the disease.

Even if this elimination were to successfully proceed in a phased and verifiable fashion—as the abolitionists usually advocate—it would still be destabilizing, unless the human condition were so altered as to eliminate

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<sup>38</sup> For a useful survey of the challenges facing the U.S. nuclear weapons production complex, see Taylor A. Bolz, ed., *In the Eyes of Experts: Analysis and Comments on America's Strategic Posture* (Washington, D.C.: United States Institute of Peace Press, 2009), 99–189.

the prospect of recidivism entirely. Not even the boldest of the nuclear abolitionists can contend that this might be achieved. Given this reality, U.S. policymakers should recognize that there is no escape from the enduring reality of nuclear weapons in competitive politics, and their commitment to abolish these weapons enshrined in the NPT is, therefore, little other than a “noble lie.” The ethic of purity and the ethic of responsibility, then, combine to demand that statesmen persist with those prosaic choices that have maintained international security thus far: upholding the system of deterrence that prevents nuclear use, conventional aggression, and strategic coercion. Continuing to painstakingly implement such a policy is far less flashy than the phantasmagorical pursuit of nuclear abolition, but it is much more prudent, dependable, and effective.