

APPROACHING CRITICAL MASS

Asia's Multipolar Nuclear Future

By Matthew Kroenig



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Matthew Kroenig

THE NATIONAL BUREAU *of* ASIAN RESEARCH

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APPROACHING CRITICAL MASS

Asia's Multipolar Nuclear Future

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— FOREWORD —

The nuclear order today has evolved from the bipolar competition of the Cold War into a more diffuse, multipolar structure characterized by the presence of several nuclear powers with varied capabilities. While there is a rich body of knowledge derived from the historic U.S.-Soviet strategic rivalry, the emergence of new nuclear actors in the Asia-Pacific, coupled with the region's complex geopolitics, implies the need for a better understanding of the evolving nuclear competition.

What is absolutely clear, nearly 25 years since the end of the Cold War, is that nuclear weapons remain very relevant in Asia. In a region marked by consequential transitions in economic growth that have tipped the global center of gravity from the West to the East, growing geopolitical competition among the major regional states, unresolved territorial disputes, and uncertainties surrounding China's rise and increasing assertiveness, it is not surprising that the fraught security environment has engendered and even fueled the nuclear ambitions of many regional states. These include both the established nuclear weapons states, such as Russia, China, India, and Pakistan, and other states that are either actively pursuing a nuclear program or have significant "latent" nuclear capabilities, such as Iran, North Korea, Japan, and South Korea. Both the entrenched nuclear powers and countries with latent nuclear capabilities were studied in depth in *Strategic Asia 2013–14: Asia in the Second Nuclear Age*, which provided a foundation for the issues explored in this report.

The slow growth in the number of recognized and potential nuclear players challenges the stability that was assumed to obtain under the umbrella of bipolar rivalry. The emergence of new threats in other domains, such as space, cyber warfare, and long-range conventional precision strike, now also have an impact on stability in the nuclear realm in ways that are not always clearly understood. These changes nonetheless will affect various countries' calculations in regard to further vertical and horizontal nuclear proliferation, the need for strategic assurance, their evolving grand strategies and force postures, the prospect of arms races and arms control, and the dangers of crisis escalation, to name a few. In order for the United States to effectively manage the continuing perils of nuclear proliferation, a better understanding of the contours of Asia's current and future multipolar nuclear dynamics is essential.

Against this backdrop, the National Bureau of Asian Research (NBR), with generous support from the MacArthur Foundation and the Carnegie Corporation of New York, embarked on a multiyear project to study Asia's nuclear future. Findings from this project have been published in the aforementioned *Strategic Asia* volume as well as in a roundtable of essays in NBR's *Asia Policy* journal that provided regional perspectives on Asia's multipolar nuclear dynamics.¹ This report by Matthew Kroenig weaves together these earlier findings and addresses the following critical questions:

- What are the distinctive theoretical implications of nuclear multipolarity?
- Which domains grow in importance due to the emerging nuclear order?
- How does this new order embody itself and present issues in contemporary Asia?
- What are the options for U.S. policymakers to defend U.S. interests in Asia?

¹ Christopher P. Twomey et al., "Approaching Critical Mass: Asia's Multipolar Nuclear Future," *Asia Policy*, no. 19 (2015).

In this insightful report, Kroenig offers a robust conceptual framework for understanding the contemporary nuclear order in Asia. Drawing on workshops and discussions in New Delhi and Seoul, as well as on scores of interviews with regional nuclear experts and policymakers, this theoretically sound and empirically rich monograph provides readers with valuable insights to help navigate the complexities of Asia's nuclear environment.

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Approaching Critical Mass: Asia's Multipolar Nuclear Future

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EXECUTIVE SUMMARY

This report explores the dynamics of a multipolar nuclear order in Asia and its implications for U.S. foreign and defense policy.

MAIN ARGUMENT

Nuclear multipolarity in Asia poses a number of unique challenges for U.S. national security, which are often novel from similar problems faced under conditions of nuclear bipolarity. As defined in this report, a multipolar nuclear order is simply an international system in which multiple nuclear-armed states regularly interact. Asia is defined here broadly as stretching from East Asia to the Middle East. The most important and fundamental differences with the Cold War are that, at present, the major nuclear-armed states each have multiple nuclear-armed adversaries, and these competitor states are not aligned with one another, meaning that each power must take into account, and tailor policies to address, distinct and often overlapping strategic dynamics. The U.S. faces heterogeneous dangers from Russia, China, and North Korea. Russia must be concerned with distinct nuclear threats from both China and the U.S. China confronts manifold challenges from the U.S., Russia, and India. And India must deter unlike nuclear threats from China and Pakistan. There are other differences as well, each with specific implications for nuclear strategy and posture, arms races and arms control, escalation, extended deterrence and assurance, and proliferation.

POLICY IMPLICATIONS

- In a world with multiple nuclear adversaries, U.S. officials and strategists need to move away from thinking about a single nuclear strategy or posture and toward a model of separate strategies, postures, and capabilities for each potential adversary.
- Washington needs to understand that changes to its nuclear posture and strategy can have widespread effects throughout the system and consider more creative arms control agreements that encourage restraint between states in different positions in the international system, lock in asymmetric capabilities, and place limits on unlike capabilities.
- To effectively extend deterrence in East Asia and assure regional allies, the U.S. must continue to maintain a clear advantage in strategic capabilities over potential regional adversaries.
- To contain the dangers unleashed by nuclear multipolarity, Washington must hold the line on future nuclear proliferation in the region and, where possible, take proactive steps to roll back existing nuclear capabilities.

Asia is arguably the world's most important geostrategic region. Many had hoped that its future could be characterized by great-power accord, increasing economic interdependence, and cooperation, but as China has become more powerful and assertive in recent years, it is clear that alternative, more conflictual dynamics are also possible. Major theories of international relations assess that the United States and China may face a higher risk of great-power war than any other dyad on the planet. And in the event of hostilities between these two powers, scenarios that result in nuclear exchange are conceivable. In addition, North Korea continues to pursue nuclear capabilities and threaten regional order and stability. If U.S. allies in the region come to believe that they can no longer count on the United States to provide for their security, some states may feel compelled to take matters into their own hands, potentially developing independent nuclear capabilities and spurring a regional nuclear arms race. Furthermore, India and Pakistan have engaged in a series of high-stakes nuclear crises over the course of the past decade, and additional countries in Asia may seek to acquire nuclear weapons over time. As the number of nuclear powers in the region increases, so too do the risks of dangerous nuclear escalation and even nuclear exchange. In short, Asia may be approaching a critical mass. The stakes are high, and it is critical that Washington gets right its nuclear deterrence and assurance policies in Asia.

Much of the conventional wisdom in the West on the dynamics of nuclear deterrence, arms races, stability, assurance, and nuclear nonproliferation is derived from the bipolar Cold War relationship between the United States and the Soviet Union. While Britain, France, and China also have possessed nuclear weapons throughout much of the nuclear age, the thrust of analytic and policy attention during the Cold War remained firmly focused on the U.S.-Soviet dyad. There is good reason to believe, however, that nuclear dynamics might operate quite differently in a multipolar system. Asia is already a multipolar nuclear region comprising several existing nuclear powers (Russia, the United States, China, India, Pakistan, and North Korea), several states that depend on U.S. extended nuclear deterrence for their security (Japan, South Korea, Australia, and the Philippines), a handful of near-nuclear states that could develop nuclear weapons quickly if they were to decide to do so (Japan, South Korea, and Iran), and other plausible nuclear powers that could emerge over the coming decades (Australia, Vietnam, Indonesia, Malaysia, Saudi Arabia, Turkey, and the United Arab Emirates).

Thus, simply applying bipolar models from the past to a new and more dynamic context could prove inadequate and potentially disastrous. Instead, we need to better understand how nuclear deterrence, arms races, escalation, assurance, and nonproliferation differ when there are multiple nuclear-armed states rather than merely two. We also need a better grasp of the implications of this changed deterrence landscape for U.S. national security policy.

Of course, related issues have been explored in the past. During the Cold War, nuclear deterrence was a central subject of academic and policy inquiry, but, as stated above, much of this research focused on bipolar relations.¹ Although in recent years attention has once again returned to nuclear issues, in the aftermath of September 11 much of this research has focused

¹ Herman Kahn, *On Thermonuclear War* (Princeton: Princeton University Press, 1960); Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 2008); Charles L. Glaser, *Analyzing Strategic Nuclear Policy* (Princeton: Princeton University Press, 1990); Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca: Cornell University Press, 1990); and Robert Powell, *Nuclear Deterrence Theory: The Search for Credibility* (New York: Cambridge University Press, 2008).

on nuclear proliferation and nuclear terrorism rather than on nuclear deterrence and assurance.² As Asia has emerged as a central region of geopolitical concern, several high-quality studies have looked at nuclear issues in the region, but they have not approached the problem through the lens of multipolar nuclear dynamics.³ Others examine nuclear multipolarity, but not with a focus on Asia.⁴ Finally, a handful of studies over the years have explicitly adopted a multipolar nuclear approach to Asia and have made important contributions, but more work remains to be done.⁵

This report will move beyond existing studies to explore the emerging multipolar nuclear order in contemporary Asia. As defined in this report, a multipolar nuclear order is simply an international system in which multiple nuclear-armed states regularly interact. Asia, defined broadly as stretching from East Asia to the Middle East, is the ideal geographic setting for this study both because it provides a perfect case for developing insights and concepts of multipolar nuclear dynamics and because of its geostrategic importance to U.S. national security interests.

This report will argue that nuclear multipolarity does indeed pose a number of unique security challenges with regard to nuclear strategy and posture, arms races, escalation, assurance, and proliferation. These dynamics are different from similar ones faced in conditions of nuclear bipolarity. Perhaps the most important and fundamental point of contrast with the Cold War is that, at present, the major nuclear-armed states each have multiple nuclear-armed adversaries. Moreover, unlike in the Cold War, these competitor states are not aligned with one another, meaning that each power must take into account—and tailor policies to address—multiple, distinct, and often overlapping strategic dynamics. The United States faces heterogeneous dangers from Russia, China, and North Korea. Russia must be concerned with distinct nuclear threats from both China and the United States. China confronts manifold challenges from the United States, Russia, and India. And India must deter unlike nuclear threats from China and Pakistan.

There are other differences as well. Some of these potential developments are truly unique and only possible in a multipolar framework. Others are merely additive; an increased number of players intensifies dynamics that were already visible in bipolar relations. Both categories, however, present real theoretical and policy challenges demanding further exploration. This report employs two primary methods. The first thematic section develops theories, concepts, and hypotheses to better understand the dynamics of Asia's multipolar nuclear environment through both deductive and inductive reasoning and a review of existing scholarship. The second major section examines these issues in contemporary Asia by drawing on elite interviews with leading academic and think tank experts and current and former government officials from around the world. In 2015, the principal investigator led a series of workshops and meetings in New Delhi,

² Matthew Kroenig, *Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons* (Ithaca: Cornell University Press, 2010); Matthew Fuhrmann, *Atomic Assistance: How "Atoms for Peace" Programs Cause Nuclear Insecurity* (Ithaca: Cornell University Press, 2012); Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Holt, 2005); and Michael Levi, *On Nuclear Terrorism* (Cambridge: Harvard University Press, 2007).

³ Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton: Princeton University Press, 2014); Elbridge A. Colby and Abraham M. Denmark, "Nuclear Weapons and U.S.-China Relations: A Way Forward," Center for Strategic and International Studies, report of the PONI Working Group on U.S.-China Nuclear Dynamics, 2013, http://csis.org/files/publication/130307_Colby_USChinaNuclear_Web.pdf; and Stephen J. Cimbala, "Anticipatory Attacks: Nuclear Crisis Stability in Future Asia," *Comparative Strategy* 27, no. 2 (2008): 113–32.

⁴ Brad Roberts, "Nuclear Multipolarity and Stability," Institute for Defense Analyses, November 2000; James Acton, *Deterrence During Disarmament: Deep Nuclear Reductions and International Security*, Adelphi 417 (New York: Routledge, 2010); John J. Weltman, "Managing Nuclear Multipolarity," *International Security* 6, no. 3 (1981/1982): 1982–94; and Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: St. Martin's Press, 2012).

⁵ Muthiah Alagappa, ed., *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia* (Stanford: Stanford University Press, 2008); Brad Roberts, "Asia's Major Powers and the Emerging Challenges to Nuclear Stability among Them," Institute for Defense Analyses, February 2009; and Christopher P. Twomey, "Asia's Complex Strategic Environment: Nuclear Multipolarity and Other Dangers," *Asia Policy*, no. 11 (2011): 51–78.

Seoul, and Washington, D.C. Further information was gleaned in late 2015 and early 2016 through one-on-one and small group meetings and telephone calls with experts from Russia, China, India, Pakistan, Japan, the Republic of Korea (ROK), and the United States. In total, several dozen of the world's leading authorities on nuclear issues in Asia were consulted. Because all discussions took place under the Chatham House Rule, sources for much of the information in the report will not be directly cited, although contextual information about sources is noted when appropriate.

While this study is intended to break new ground and develop novel insights, it does not attempt to provide a comprehensive review of all the possible wrinkles that nuclear multipolarity poses to existing policy and strategy. Rather, the report will focus on how nuclear multipolarity affects several domains that emerged as particularly interesting and salient over the course of the study.

The rest of the report comprises three parts. The first section examines the theoretical implications of nuclear multipolarity and considers how these may vary from insights derived from the classic nuclear security literature. The second section then analyzes the contours of nuclear multipolarity in Asia today. Finally, the study concludes by offering a broad review of actionable policy recommendations to help the United States navigate Asia's multipolar nuclear order.

Conceptual Issues in Multipolar Nuclear Orders

There are many ways in which classic theories of nuclear deterrence and proliferation may be altered when considered in the light of nuclear multipolarity. An examination of these differences reveals hypotheses that could become the subject of future rigorous social science research. Moreover, it also reveals clear implications for U.S. nuclear policy in Asia today. There are many possible angles from which one could attempt to analyze classic nuclear theories using a multipolar framework. Rather than attempt to exhaust the possibilities, this report focuses on five issue domains that emerged over the course of the study as particularly interesting and salient: nuclear strategy and posture, arms races and arms control, escalation and stability, extended deterrence and assurance, and proliferation.

Before turning to these conceptual issues, however, a brief discussion of terminology is in order. This study defines a multipolar nuclear order simply as an international system in which multiple nuclear powers regularly interact. By "multipolar," I simply mean multiple powers, regardless of whether they are great powers or "poles" in the broader international system as defined by international relations theorists.⁶ By "nuclear," I mean states that currently possess or could in the not-too-distant future come to acquire a deployed nuclear weapons force. Finally, I am adopting the *Oxford English Dictionary's* definition of "order" as simply "the arrangement or disposition of people or things in relation to each other according to a particular sequence, pattern, or method." Order does not necessarily connote formal institutions, such as arms control treaties or international organizations, nor does it betray assumptions about the relative stability, or lack thereof, of the system, although these are all issues that will receive consideration.

This report also must make assumptions about the future of Asia, which will turn significantly on China's trajectory. My analysis presumes that the United States and China will continue to compete in some realms, such as security, while cooperating in others, and that although both

⁶ Kenneth N. Waltz, *Theory of International Politics* (New York: McGraw-Hill, 1979); and Karl W. Deutsch and J. David Singer, "Multipolar Power Systems and International Stability," *World Politics* 16, no. 3 (1964): 390–406. On "skewed multipolarity," see Richard J. Ellings and Edward A. Olsen, "Asia's Challenge to American Strategy," *NBR Analysis*, June 1992.

sides would prefer to avoid outright conflict, they must also prepare for worst-case scenarios. While such a straight-line projection of the status quo may look naïve in hindsight, at present it seems a surer bet than the possible alternatives.

Nuclear Strategy and Posture

Nuclear multipolarity raises a concrete, but understudied, problem for the strategies and postures of nuclear-armed states: how does a state plan to deter, and if necessary fight, nuclear wars with multiple nuclear-armed adversaries? Of course, if one believes that the mere presence of nuclear weapons provides a kind of existential deterrence, then these issues may seem less salient. However, policymakers, and increasingly academics, believe and act as if the details of nuclear posture and strategy matter greatly for deterrence.⁷

Four broad approaches for dealing with multiple nuclear adversaries are possible, ranging from most to least robust and resource-intensive. First, a state could plan for the need to counter all possible adversaries simultaneously. Second, a state could develop separate tailored plans and postures for each potential nuclear adversary but assume that, with perhaps an exception or two, it will not be called on to implement multiple plans at the same time. Third, states could plan solely for the most sophisticated opponent and assume that other opponents could be dealt with as lesser and included cases. Fourth, a state could decide that tailored plans are too complicated and adopt a minimal nuclear deterrent pointed in all directions.

The postures that specific nuclear powers in Asia are currently adopting will be reviewed in section two. Responses to this broad strategic challenge not only are important in and of themselves but raise other practical questions. Does the possibility of deterring multiple nuclear adversaries at once create strong incentives for striking first in a crisis in order to blunt an adversary's capabilities to the greatest extent possible and avoid a nuclear counterattack that will jeopardize a state's ability to deter (or strike) a third party? In other words, does this scenario demand a kind of nuclear Schlieffen Plan? If so, what are the implications for stability and what are the demands placed on states' nuclear postures? A nuclear warfighting strategy against multiple nuclear powers, for example, would certainly place upward pressure on nuclear numbers and the capabilities required, potentially exacerbating nuclear arms races and complicating nuclear arms control. On the other hand, the widespread adoption of minimum deterrent postures could greatly mitigate some of these dangers.

Arms Races and Arms Control

How might arms races and arms control operate differently under nuclear multipolarity? In bipolar nuclear relationships, states considering changes to their nuclear forces and posture would have to make judgements about whether such changes might provoke an adversary to respond, potentially instigating an arms race and making the initial state less secure.⁸ Under nuclear multipolarity, these calculations are complicated by the possibility of multiple states reacting. Several dynamics are possible. First, a single change at one end of the multipolar order could trickle throughout the system. For example, it is conceivable that as Russia moves nuclear weapons to the center of its military doctrine and strategy that the United States may respond by developing more

⁷ Narang, *Nuclear Strategy in the Modern Era*; and Matthew Kroenig, "Nuclear Superiority and the Balance of Resolve," *International Organization* 67, no. 1 (2013): 141–71.

⁸ See, for example, Andrew Kydd, "Arms Races and Arms Control: Modeling the Hawk Perspective," *American Journal of Political Science* 44, no. 2 (2000): 228–44.

flexible nuclear and nonnuclear strike options and missile defenses. These changes in Washington may cause Beijing to fear that its retaliatory capability is being placed at risk, leading China to gradually expand and modernize its strategic forces. Such a move could then spur India to build up its forces to maintain an assured retaliatory capability vis-à-vis China, which could then prompt alterations in Pakistan's strategy. It is also possible of course that changes could flow in the other direction. Pakistan's nuclear warfighting approach may instigate amendments to Indian strategy and capabilities with an effect that could be felt in Beijing and, eventually, Washington and Moscow.⁹

Second, to the degree that one or more states occupy a central role in the nuclear order due to the existence of multiple nuclear adversaries or allies, a single change to posture and strategy, even in a peripheral state, could lead to arms race dynamics that engulf multiple states simultaneously. If North Korea, a single U.S. rival, were to make improvements to its nuclear capabilities, for example, Washington may seek to respond by developing new capabilities, such as missile defense systems, to defend against attacks emanating from Pyongyang. But in so doing, Washington's capabilities may begin to call into question the survivability of arsenals in Russia and China, provoking an arms buildup in those two countries. If, on the other hand, the United States refrains from responding, South Korea and Japan may question the strength of U.S. extended deterrence guarantees and develop independent nuclear arsenals. In this example, the allied decision is about initiating a nuclear weapons production program, but in theory it could also include decisions about enhancements to an existing arsenal. Indeed, this discussion brings to light a dilemma that centrally located states in multipolar nuclear orders face between actions that threaten to instigate arms buildup by multiple adversaries and those that do the same for allies.

These ideas are similar to the concept advanced by others about Asia consisting of overlapping triangles, with the United States, Russia, and China competing in Northeast Asia and China, India, and Pakistan constituting a similar triad in South Asia.¹⁰ The above discussion indicates, however, that the most important feedback loops may not be triadic but rather a chain of linked dyads or a dynamic of four, five, or even more states engaging nearly simultaneously.

Of course, in order for changes in nuclear posture to disseminate through the system, whether in triangular or dyadic fashion, statesmen in the nuclear powers must to some degree be disciples of Albert Wohlstetter. Wohlstetter believed that the balance of nuclear terror was "delicate" and that nations must continually adjust their nuclear posture to maintain an adequate nuclear deterrence force in the face of nuclear competition from rivals.¹¹ His primary intellectual rival, Bernard Brodie, disagreed.¹² Brodie and those in his tradition believe that a minimal nuclear force is sufficient for nuclear deterrence and that states thus need not worry greatly about, or respond to, developments in adversarial nuclear postures. If leaders of nuclear-armed states view nuclear deterrence through a Wohlstetterian lens, it is much more likely that developments in one nuclear state will quickly disseminate through the system. If, however, one state is following Brodie, then the link could be broken. At present, it appears that two states in the center of this nuclear chain, China and India, have postures much more in line with a Brodian perspective. This could

⁹ On nuclear strategy in China, Pakistan, and India, see Narang, *Nuclear Strategy in the Modern Era*.

¹⁰ Twomey, "Asia's Complex Strategic Environment."

¹¹ Rajesh Basrur, "Nuclear Deterrence: The Wohlstetter-Blackett Debate Revisited," S. Rajaratnam School of International Studies (RSIS), RSIS Working Paper, no. 271, April 15, 2014.

¹² Bernard Brodie, ed., *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt, 1946).

dampen the extent of reactive arms races in a multipolar nuclear Asia to some degree. Although such arms races could continue to exist if developments led Beijing or New Delhi to assess that its second-strike capabilities might be at risk, such competition could be even more severe in the future if China or India, or both, switched to a Wohlstetterian view on the requirements for successful nuclear deterrence.

Multipolar nuclear relationships have implications for both arms races and arms control. In a multipolar nuclear order, not only do bilateral nuclear arms control agreements become less valuable, but multilateral arms control agreements become more difficult to strike. As everyday experience and international relations scholarship instruct us, the more parties to a negotiation, the more difficult it is to reach an agreement acceptable to all.¹³ Further, bringing in more actors, with more heterogeneous capabilities, makes it less palatable and less feasible to find agreeable symmetrical restraints. In addition, for those who believe that arms control can be a strategic tool to advance national security, in many cases it will be difficult to divine precisely how a specific agreement would lock in national advantages across a range of potential competitor states, especially if the agreement includes only some, but not all, possible competitors.

Escalation and Stability

The most important reason to be concerned about nuclear weapons in Asia, of course, is the threat that nuclear weapons might be used. To be sure, the use of nuclear weapons remains remote, but the probability is not zero and the consequences could be catastrophic. The subject, therefore, deserves careful scrutiny. Nuclear use would overturn a 70-year tradition of nonuse, could result in large-scale death and destruction, and might set a precedent that shapes how nuclear weapons are viewed, proliferated, and postured decades hence. The dangers of escalation may be magnified in a multipolar nuclear order in which small skirmishes present the potential to quickly draw in multiple powers, each with a finger on the nuclear trigger. The following discussion will explore the logic of crisis escalation and strategic stability in a multipolar nuclear order.¹⁴

First and foremost, the existence of multipolar nuclear powers means that crises may pit multiple nuclear-armed states against one another. This may be the result of formal planning if a state's strategy calls for fighting multiple nuclear-armed adversaries simultaneously. A state may choose such a strategy if it believes that a war with one of these states would inevitably mean war with both. Alternatively, in a war between state A and state B, state A may decide to conduct a preventive strike on state C for fear that it would otherwise seek to exploit the aftermath of the war between states A and B. Given U.S. nuclear strategy in the early Cold War, for example, it is likely that a nuclear war between the United States and the Soviet Union would have also resulted in U.S. nuclear attacks against China, even if China had not been a direct participant in the precipitating dispute.

In addition, conflicts of interest between nuclear powers may inadvertently impinge on the interests of other nuclear-armed states, drawing them into conflict. There is always a danger that one nuclear power could take action against a nuclear rival and that this action would unintentionally cross a red line for a third nuclear power, triggering a tripartite nuclear crisis. Linton Brooks and Mira Rapp-Hooper have dubbed this category of phenomena the

¹³ Kenneth A. Oye, "Explaining Cooperation under Anarchy: Hypotheses and Strategies," in *Cooperation under Anarchy*, ed. Kenneth A. Oye (Princeton: Princeton University Press, 1986), 1–24.

¹⁴ Robert Powell, "Crisis Bargaining, Escalation, and MAD," *American Political Science Review* 81, no. 3 (1987): 717–35.

“security trilemma.”¹⁵ For example, if the United States were to engage in a show of force in an effort to signal resolve to Russia, such as the flushing of nuclear submarines, this action could inadvertently trigger a crisis for China.

There is also the issue of “catalytic” war. This may be the first mechanism by which Cold War strategists feared that multiple nuclear players could increase the motivations for a nuclear exchange. They worried that a third nuclear power, such as China, might conduct a nuclear strike on one of the superpowers, leading the wounded superpower to conclude wrongly that the other superpower was responsible and thereby retaliate against an innocent state presumed to be the aggressor. This outcome was seen as potentially attractive to the third state as a way of destroying the superpowers and promoting itself within the global power hierarchy. Fortunately, this scenario never came to pass during the Cold War. With modern intelligence, reconnaissance, and early warning capabilities among the major powers, it is more difficult to imagine such a scenario today, although this risk is still conceivable among less technologically developed states.

In addition to acting directly against one another, nuclear powers could be drawn into smaller conflicts between their allies and brought face to face in peak crises. International relations theorists discuss the concept of “chain ganging” within alliance relationships, the dangers of which are more severe when the possibility of nuclear escalation is present.¹⁶ Although this was a potential problem even in a bipolar nuclear order, the more nuclear weapons states present, the greater the likelihood of multiple nuclear powers entering a crisis. A similar logic suggests that the more fingers on the nuclear trigger, the more likely it is that nuclear weapons will be used.

Multipolar nuclear crises are not without historical precedent.¹⁷ Several Cold War crises featured the Soviet Union against the United States and its European nuclear-armed allies, Britain and later France. The 1973 Arab-Israeli War involved the United States, the Soviet Union, and a nuclear-armed Israel. The United States has been an interested party in regional nuclear disputes, including the Sino-Soviet border war of 1969 and several crises in the past two decades on the Indian subcontinent. Indeed, many of these crises stand out as among the most dangerous of the nuclear era.

Some scholars argue that the existence of multiple nuclear powers might actually lead to international stability, but this view has not gained much traction beyond the ivory tower.¹⁸ At least one empirical study, however, shows that multipolar nuclear crises may be less dangerous than their bipolar counterparts.¹⁹ A statistical analysis of data from the International Crisis Behavior Project demonstrates that crises involving nuclear powers are more likely to end without violence and that, as the number of nuclear powers involved increases, the probability of full-scale war decreases. Before taking too much comfort in this finding, however, we must remember that the statistical research on how nuclear weapons affect international conflict is in

¹⁵ Linton Brook and Mira Rapp-Hooper, “Extended Deterrence, Assurance, and Reassurance in the Pacific during the Second Nuclear Age,” in *Strategic Asia 2013–14: Asia in the Second Nuclear Age*, ed. Ashley J. Tellis, Abraham M. Denmark, and Travis Tanner (Seattle: National Bureau of Asian Research, 2013), 292.

¹⁶ Thomas J. Christensen and Jack Snyder, “Chain Gangs and Passed Bucks: Predicting Alliance Patterns in Multipolarity,” *International Organization* 44, no. 2 (1990): 137–68.

¹⁷ Kroenig, “Nuclear Superiority and the Balance of Resolve.”

¹⁸ Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Papers 171 (London: International Institute for Strategic Studies, 1981); and Matthew Kroenig, “The History of Proliferation Optimism: Does It Have a Future?” *Journal of Strategic Studies* 38, no. 1–2 (2015): 98–125.

¹⁹ Victor Asal and Kyle Beardsley, “Proliferation and International Crisis Behavior,” *Journal of Peace Research* 44, no. 2 (2007): 139–55.

its infancy and has produced some contradictory findings.²⁰ Moreover, even if the probability of war among multiple nuclear powers is lower than between two nuclear states or nonnuclear states, the probability is not zero, and the consequences of any such war would potentially be much more devastating.

In addition to the inherent dangers of crisis escalation, advanced technology further complicates nuclear multipolarity. As discussed above, the danger exists that nuclear powers may cross each other's red lines inadvertently, and this problem may be exacerbated by modern weapons, the effects of which their wielders may not fully understand. In the cyber domain, for example, it is conceivable that state A may attempt to conduct an attack on state B's energy infrastructure but also take down part of state C's grid by accident, leading to a three-way crisis.²¹

In the future, nations may also attempt to conduct a first strike on an opponent's nuclear forces with a cyberattack. While states will undoubtedly seek to air-gap their strategic capabilities, it is becoming increasingly difficult to do so for all aspects of a nation's strategic systems, and in some cases systems that appear to be air-gapped are not.²² To make matters worse, even the possibility of a cyberattack could cause a state to doubt the capability and responsiveness of its nuclear forces. A state cannot know for certain if its capabilities have been degraded through a cyberattack unless they are constantly tested. Moreover, even if a country finds that its system has been degraded, knowing whether the problem is the result of a malfunction or a cyberattack will be difficult. If a cyberattack is determined to have occurred, attributing the attack would also pose a difficult, but likely not insurmountable, problem.

Nonetheless, it remains difficult to see how these challenges could lead to nuclear escalation. It is hard to fathom that a state would retaliate with nuclear weapons to anything but the most catastrophic cyberattacks. Further, as with nuclear terrorism, other than in scenarios involving misattribution and retaliation against an innocent third party, it is difficult to see how the challenges to stability from cyberspace are more complicated in a multipolar nuclear order.

Scholars have also argued that conventional prompt global strike capabilities or hypersonic glide vehicles could make it difficult to distinguish a nuclear from a conventional attack.²³ This could cause the target of an incoming strike to assume the worst and prepare for, or even launch, nuclear retaliation before absorbing an incoming attack. In theory, this problem could also be present for dual-capable fighter and bomber aircraft, but it is most often applied to missile delivery. Another potential problem in this vein is China's co-location of nuclear and conventional missiles. Although China's nuclear and conventional command, control, communications, and intelligence systems are slowly being separated, in the event of conflict it may be difficult for other nations to know whether an incoming missile is armed with a nuclear or conventional warhead. Others worry about the presumed destabilizing effects of missile defenses. At the end of the day, however, all these concerns rest on the "use them or lose them" logic of nuclear escalation. As I have contended elsewhere, these arguments rest on weak logic and lack empirical support.²⁴ To be sure, there are

²⁰ Erik Gartzke and Matthew Kroenig, "Nukes with Numbers: Empirical Research on the Consequences of Nuclear Weapons for International Conflict," *Annual Review of Political Science* (2016), <http://dx.doi.org/http://dx.doi.org/10.1177/0022343307075118>.

²¹ I thank Bruce MacDonald for bringing this point to my attention.

²² The cyberattack on Iran's uranium-enrichment program provides one prominent example of the infiltration of a system thought to be secure. See David E. Sanger, *Confront and Conceal* (New York: Broadway Books, 2012).

²³ James M. Acton, "Silver Bullet? Asking the Right Questions about Conventional Prompt Global Strike," *Carnegie Endowment for International Peace*, 2013.

²⁴ Matthew Kroenig, "Think Again: American Nuclear Disarmament," *Foreign Policy*, September/October 2013.

many dangers of nuclear escalation under nuclear multipolarity, but it is difficult to see how new technologies exacerbate this problem.

Extended Deterrence and Assurance

In discussions of extended deterrence it is taken as a truism that assuring one's allies is more difficult than deterring one's adversaries. This fact is often viewed with bewilderment as one of the universe's great mysteries, but upon reflection the distinction makes much sense. If China were to attack Japan, for example, testing the United States' security commitment, one could not guarantee that Washington would come to Tokyo's defense, but neither is it clear that Washington would stay out of the conflict. Nothing in life is certain. Given the long-standing nature of the U.S.-Japan alliance, the true likelihood is probably closer to one than to zero, but, for the sake of argument, let us assume it is 75%. From the point of view of Beijing, a 75% chance of war with the strongest military on earth is a potent deterrent. The same situation looks quite different, however, from Tokyo's perspective. If there is a full 25% chance that your ally will not come to your defense in the event that you are attacked by a powerful foe, then there is good reason to be nervous and request stronger assurances.

While this basic truism makes extended deterrence and assurance difficult in normal conditions, the situation is exacerbated in nuclear multipolarity. In such an environment, it may be more difficult for nuclear powers to assure their allies about the credibility of security guarantees. For reasons discussed below, allies might be more tempted to go nuclear as the demand- and supply-side drivers of proliferation increase, adding pressure to nuclear security guarantees. In addition, as the number of nuclear powers increases, the number of hostile nuclear-armed states that the allied nuclear umbrella is meant to deter and, if necessary, defeat also increases. If allies have traditionally been wary about the credibility of the U.S. willingness to fight a nuclear war on their behalf against a single nuclear adversary, how can they be expected to believe that the United States can and will fight a nuclear war against multiple nuclear adversaries if necessary? Does the United States, or any state, have the correct doctrine, strategies, and capabilities to deter multiple adversaries simultaneously? Moreover, Washington made decisions to extend the nuclear umbrella to address a specific threat, but it did not necessarily foresee or intend for that guarantee to apply equally to each and every subsequent nuclear threat that arises in the future. Are its guarantees as good for newer threats that the nuclear umbrella was not originally intended to cover? If so, will allies believe this to be the case? Clearly, the challenges posed by nuclear multipolarity are greater than in the old model.

Also, with the end of the Cold War, the cost to the United States of protecting its allies has arguably decreased (although it has begun to rise again in recent years). Yet at the same time, the absence of a menacing threat from a peer competitor means that Washington retains a wider range of strategic choices, potentially leading allies to fear that the United States may decide to walk away from its commitments.

Perhaps most vexing, under conditions of nuclear multipolarity a security patron is more likely to need to assure two states in conflict with one another that are under the same nuclear umbrella. This was always potentially a problem so long as a single patron extended a nuclear umbrella to multiple states, but the problem may be even more challenging in nuclear multipolarity.²⁵

²⁵ For an analysis of the logic of such "pivotal deterrence" in historical cases, see Timothy W. Crawford, *Pivotal Deterrence: Third-Party Statecraft and the Pursuit of Peace* (Ithaca: Cornell University Press, 2003).

If nuclear weapons spread throughout the Middle East, for example, the United States may find itself assuring both Israel and several Arab states. What if these states get into a conflict against one another? How do extended deterrence and assurance work in this setting? It is likely that Washington would seek to use its leverage to defuse the crisis, but if this proves insufficient, could one envision the security patron making military threats against one or more of its supposed allies on behalf of another ally? Similar dynamics could arise in East Asia, where there is deep historical animosity between U.S. allies. South Korea and Japan have engaged in military disputes in the past, and a resumption of conflict cannot be entirely ruled out in the future. Short of outright conflict and much more likely, however, underlying tensions and simmering disputes among smaller allies can complicate a patron's ability to extend deterrence to multiple states.

Additional complications can arise from the divergent interests between different allied partners about the best means of providing extended deterrence, including how to deter a shared adversary or how to respond in the event that deterrence fails. For example, states on the front lines of a shared threat may prefer a tougher deterrence policy to guarantee security, whereas more distant states may prefer a softer approach both because the threat to them is less severe and because they hope to maintain cooperative relations on other issues. Alternatively, the situation may be reversed. The nearer state may be wary of provoking a proximate threat, while the more distant state has less to lose from an aggressive posture.

Similarly, in the event that deterrence fails, local allies and distant security providers may systematically prefer divergent responses. In the event of a nuclear attack, for example, local states may make calculations solely with regard to regional conditions, whereas the patron will also need to factor in broader, and sometimes global, commitments, including its reputation and credibility. It could be that the local state would prefer a strong conventional response to avoid the various costs of a nuclear attack against a neighboring state, such as radioactive fallout and the mass devastation of a neighbor's population. Contrariwise, the patron, with an eye to its global commitments, may insist on a nuclear response to a nuclear attack to restore the credibility of its broader nuclear deterrence policy and set a precedent that will be witnessed in other geographic regions. The effect could also go in the exact opposite direction. If the patron is attempting to set a norm of de-emphasizing nuclear weapons, it may prefer a strictly conventional response, even if the regional ally is demanding a nuclear counterstrike. In addition, the patron may be more sensitive to avoid provoking security trilemmas. A strong response may be necessary to satisfy a local ally, but it might also risk crossing red lines for a third nuclear power not yet involved in the conflict.

Proliferation

Why do nuclear weapons spread? Perhaps the most common answer to this question is that states seek nuclear weapons in order to enhance their security in general and to balance against nuclear-armed rival states in particular.²⁶ As former secretary of state George Shultz stated, "proliferation begets proliferation."²⁷ Indeed, one can provide an account of the history of nuclear proliferation that reads as a chain of nuclear dominoes falling.²⁸ Similarly, policy analysts often predict that nuclear acquisition by one state could lead to a cascade of proliferation by other

²⁶ Scott D. Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* 21, no. 3 (1996/1997): 54–86.

²⁷ George Pratt Shultz, "Preventing the Proliferation of Nuclear Weapons," U.S. Department of State, Bureau of Public Affairs, November 1984, 18.

²⁸ Thomas C. Reed and Danny B. Stillman, *The Nuclear Express: A Political History of The Bomb and Its Proliferation* (Minneapolis: Zenith Press, 2009).

regional states.²⁹ For example, many predict that if Iran were to acquire nuclear weapons, then other regional states, including Saudi Arabia, Turkey, Egypt, and the United Arab Emirates, would proliferate in response.³⁰

Recent scholarship has called into question the directness and automaticity of reactive nuclear proliferation. Philipp Bleek, for example, has shown that, on balance, proliferation does not beget proliferation and that the risk of reactive proliferation is at its zenith when three conditions hold: (1) the new nuclear state and the potential proliferator are engaged in an intense rivalry, (2) the potential proliferator is above a certain minimal threshold of industrial capacity, and (3) the potential proliferator lacks a nuclear security guarantee from an existing nuclear power.³¹ This finding is intuitive and accords with the historical record. Many U.S. policymakers predicted that China's imminent nuclearization in the 1960s would lead to a wave of proliferation. Although some of China's neighbors did eventually acquire nuclear weapons (such as India and Pakistan), others (such as Taiwan and Japan) did not.³²

When thinking about nuclear multipolarity, however, we must ask the following questions: How do these dynamics change when a potential proliferator faces not just one but two nuclear-armed rivals? Does the likelihood of reactive proliferation increase? For example, Japan has felt some pressure to develop nuclear weapons ever since its long-standing regional rival China tested its first nuclear device in the 1960s. Japan has seriously considered its nuclear option several times in the intervening decades, but each time Tokyo has recommitted to its nonnuclear status. Following North Korea's nuclear test in 2006, however, Japan suddenly faced two regional nuclear threats, increasing its insecurity. Will the existence of two nuclear rivals amplify reactive proliferation effects in Japan, or more broadly? If at some future date South Korea builds nuclear weapons, will the pressure on Japan mount still further? Moreover, if multiple nuclear-armed states are present, there is a greater numerical likelihood that a state is involved in at least one "intense rivalry," to quote Bleek's conditions. If it is indeed more tempting to go nuclear when multiple nuclear powers are present, then we might expect the reactive proliferation effect to be stronger in a multipolar nuclear order.

Another potential issue that has always been present, but which may be amplified in a multipolar context, is the setting of precedent in nuclear policy.³³ When the United States or the international community institutes a policy for one proliferator, it may encourage other states, even those in other geographic regions, to expect similar treatment for similar behavior. For example, many believe that the Iranian nuclear deal will forestall the spread of nuclear weapons in the Middle East and may even lead to a broader rapprochement between Washington and Tehran.³⁴ Even assuming for the sake of argument that the agreement is unquestionably an effective means of addressing the Iranian nuclear challenge, the willingness of the P5+1³⁵ to grant Iran the right to a uranium-enrichment program in the Joint Comprehensive Plan of Action (JCPOA) could

²⁹ Andrew F. Krepinevich, "Critical Mass: Nuclear Proliferation in the Middle East," Center for Strategic and Budgetary Assessments, December 2013.

³⁰ Ibid.

³¹ Philipp C. Bleek, "Does Proliferation Beget Proliferation? Why Nuclear Dominoes Rarely Fall" (PhD diss., Georgetown University, 2010).

³² Francis J. Gavin, "Blasts from the Past: Proliferation Lessons from the 1960s," *International Security* 29, no. 3 (2004/2005): 100–135.

³³ Krzysztof J. Pelc, "The Politics of Precedent in International Law: A Social Network Application," *American Political Science Review* 108, no. 3 (2014): 547–64.

³⁴ Robert Jervis, "Getting to Yes with Iran: The Challenges of Coercive Diplomacy," *Foreign Affairs*, January/February 2013.

³⁵ The five permanent UN Security Council members plus Germany.

risk setting a precedent that increases expectations of a right to enrichment and reprocessing technologies for member states of the Nuclear Non-Proliferation Treaty (NPT) in other regions, including East Asia.³⁶ As the audience of potential proliferators increases in a multipolar context, the potential ramifications of precedent-setting could become more profound.

There is both a supply and demand side to nuclear weapons proliferation.³⁷ For nuclear weapons to spread, states must not only want nuclear weapons but also be able to build them. Supply-side studies of proliferation argue that states can acquire a nuclear weapons production capability in at least three different ways: (1) through an indigenous industrial capacity, (2) through the receipt of sensitive nuclear technology from a more advanced nuclear state, or (3) more controversially, through civilian nuclear cooperation agreements.³⁸ How might nuclear multipolarity affect the availability of international nuclear assistance?

Existing studies find that nuclear suppliers are often motivated by a basic strategic logic of helping friends, or at least enemies of enemies, in order to influence strategic competitions.³⁹ As the number of nuclear powers increases, therefore, the availability of sensitive nuclear material and technology might also increase for at least two reasons. First, with a greater number of nuclear-armed states, there is a greater number of states with the capability, and perhaps with the interest, of providing sensitive nuclear technology. Second, as the number of nuclear powers increases, the number of geopolitical rivalries that suppliers could hope to influence by providing, or by threatening to provide, sensitive nuclear assistance also increases. Indeed, a recent working paper found that as the number of potential suppliers increases, so too does the diffusion of sensitive nuclear technology.⁴⁰

Having concluded a theoretical consideration of multipolar nuclear orders, I will now examine how these dynamics are, or are not, present in contemporary Asia and how they might drive future developments in the region. As the old quip has it, in practice the theory may be different.

Asia's Multipolar Nuclear Order

This section will examine the dynamics identified above with application to contemporary Asia. It will show that many of these forces are already manifesting themselves to a greater or lesser degree and will analyze how these trends may develop in the future.

Nuclear Planning and Posture in a Multipolar Nuclear Asia

How do states think about nuclear planning and posture in a multipolar nuclear Asia? As discussed in the previous section, four broad approaches are possible, ranging from multiple and simultaneous nuclear warfighting to minimum deterrence, but what strategies have Asian states selected in practice?

³⁶ This issue was raised at workshops conducted in Seoul in August 2015.

³⁷ Erik Gartzke and Matthew Kroenig, "A Strategic Approach to Nuclear Proliferation," *Journal of Conflict Resolution* 53, no. 2 (2009): 151–60.

³⁸ Matthew Kroenig, "Importing the Bomb: Sensitive Nuclear Assistance and Nuclear Proliferation," *Journal of Conflict Resolution* 53, no. 2 (2009): 161–80; and Christopher Bluth et al., "Civilian Nuclear Cooperation and the Proliferation of Nuclear Weapons," *International Security* 35, no. 1 (2010): 184–200.

³⁹ Kroenig, *Exporting the Bomb*; and Fuhrmann, *Atomic Assistance*.

⁴⁰ Matthew Fuhrmann, Benjamin Tkach, and Scott Cook, "A Spatial Model of Nuclear Technology Diffusion" (unpublished manuscript).

United States. For a period during the Cold War, the United States considered the Soviet Union and China to be part of a monolithic Communist bloc and, accordingly, considered the need to fight a nuclear war against both nations simultaneously.⁴¹ By 1968, however, as the Sino-Soviet split became apparent, President Lyndon Johnson allowed for the possibility of a nuclear attack against one or the other country.⁴² Judging from arms control agreements negotiated under the Obama administration, it appears that the United States currently sizes its nuclear posture largely to deal with its foremost nuclear rival, Russia, and considers smaller nuclear adversaries as lesser and included cases.

Russia. Russia's nuclear strategy has evolved differently. During the Cold War, the Soviet Union assumed that any war would be total and, therefore, planned to fight the three nuclear powers of NATO—Britain, France, and the United States—simultaneously.⁴³ After the end of the Cold War and especially in the early 2000s, responding in part to the United States' impressive display of military force in Kosovo, Moscow's strategy changed to a focus on limited nuclear war.⁴⁴ While almost certainly still planning for the possibility of total war, Moscow judges the most likely conflict scenario with NATO to be a more limited conflict in Eastern Europe. For this reason, Moscow has shifted its emphasis toward early reliance on de-escalatory nuclear strikes in order to force NATO to sue for peace on terms favorable to Russia.

But Russia also appears to tailor strategies and capabilities to different adversaries. At the same time that it envisions de-escalatory strikes against NATO, Russia pursues a strategy more akin to using massive retaliation as a deterrent against China.⁴⁵ Although the prospect of nuclear war with China is lower than with the West, Moscow assumes that such a conflict would more quickly escalate to a major theater war and, therefore, requires a more robust nuclear deterrence strategy. Indeed, Russian participants in Track 2 dialogues have often explained their interest in coming out from under the restrictions imposed by the Intermediate-Range Nuclear Forces (INF) Treaty as a way of freeing Russia to develop capabilities that could be used in the event of a conflict with China.

Moscow does not consider other states to be possible nuclear adversaries.⁴⁶ Russia is not believed to target South Asia and indeed has actively aided Indian strategic capabilities as a means of countering Chinese power. Similarly, Moscow views North Korea as a major problem for nonproliferation and regional stability—after all, the two states share a border—but not as a direct nuclear threat.

China. China must also contend with multiple nuclear-armed adversaries in the form of Russia, the United States, and India. Although little is known about its official plans, the deployment of short- and intermediate-range nuclear missiles in the north and the south of the country and development of intercontinental ballistic missiles (ICBM) suggest that China plans to deter and, if necessary, wage nuclear war against all three potential nuclear rivals.⁴⁷ The Chinese strategic writings that are accessible, however, suggest that Chinese strategy is mostly geared toward fighting

⁴¹ William Burr, ed., "U.S. Had Plans for Full Nuclear Response in Event President Killed or Disappeared during an Attack on the United States," National Security Archive, Electronic Briefing Book, no. 406, December 12, 2012, <http://nsarchive.gwu.edu/nukevault/ebb406>.

⁴² Ibid.

⁴³ Author's telephone interview with an authoritative Russian scholar and think tank expert, January 2016.

⁴⁴ Johanna Granville, "After Kosovo: The Impact of NATO Expansion on Russian Political Parties," *Demokratizatsiya* 8, no. 1 (2000): 24–45.

⁴⁵ Author's telephone interview with an authoritative Russian scholar and think tank expert, January 2016.

⁴⁶ Ibid.

⁴⁷ Author's telephone interview with a Chinese scholar, January 2016.

a large, technologically sophisticated adversary—i.e., the United States.⁴⁸ China feels that it is imperative to match, or at least be able to counter, the military technologies of its rivals and worries that lagging behind other states technologically could leave the country vulnerable.⁴⁹ Rather than develop a warfighting posture for all three states, however, Beijing has historically been content with a “lean and effective” deterrent. This view has been attributed either to established strategic culture traced back to Mao Zedong or, alternatively, to financial and organizational constraints that prevented the development of a more robust posture.⁵⁰

While its deployments in the south demonstrate that Beijing does consider nuclear deterrence of India to be a valid mission, India receives the least attention in Chinese strategic doctrine, once again illustrating the old truism that Asian powers want to compare themselves to the next biggest power in the region.⁵¹ China designs a nuclear force to deter the United States. India focuses on maintaining a survivable deterrent for China and does not want to be considered a mere South Asian power. And finally, Pakistan likes to be compared to India and is not flattered by the U.S. Af-Pak concepts that became popular at the height of the U.S. war in Afghanistan. China also has exercised for possible North Korean scenarios, but these training missions presumably are not meant to prepare Chinese forces for combat against North Korea but rather are intended to secure the Chinese border, and possibly North Korea itself, in the event of state collapse or crisis while also fending off unwanted U.S. intervention.⁵²

India. India sees China as a strategic competitor, and this is apparent in its nuclear posture. India’s pursuit of longer-range delivery systems, including ICBMs, can best be explained by a desire to cover ever-larger areas of the Chinese mainland, including Beijing. In addition, India’s pursuit of a complete nuclear triad, especially its move to deploy a nuclear-armed submarine, is, according to Indian experts, a means to improve survivability from a possible Chinese nuclear attack.⁵³ Given the current state of China’s intelligence, surveillance, and reconnaissance capabilities, however, this decision can also be explained in no small part by an unreflective mimicry of the postures of the more advanced nuclear powers, such as the United States.

At the same time, the most likely nuclear conflict scenarios pit India against Pakistan. Perhaps unique among the nuclear powers in Asia, India thus appears most concerned about the possibility of fighting multiple nuclear powers simultaneously.⁵⁴ Given the robust strategic ties between Beijing and Islamabad, this is a possibility that cannot be completely ignored, though contemporary Indian strategic thinking tends to exaggerate the danger. New Delhi worries that it could be faced with a two-front war if, in the event of a conflict with Pakistan, China were to move against India in the north, perhaps in an attempt to reclaim contested territory. Or, alternatively, Pakistan could take advantage of a renewed border war between India and China by attacking western India.

⁴⁸ Peng Guangqian and Yao Youzhi, *The Science of Military Strategy* (Beijing: Military Science Publishing House, 2005).

⁴⁹ Li Bin, “China and Global Nuclear Arms Control and Disarmament,” in *The War That Must Never Be Fought: Dilemmas of Nuclear Deterrence*, ed. George P. Shultz and James E. Goodby (Stanford: Hoover Institution Press, 2015), chap. 12.

⁵⁰ M. Taylor Fravel and Evan S. Medeiros, “China’s Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure,” *International Security* 35, no. 2 (2010): 48–87.

⁵¹ Author’s telephone interview with a Chinese scholar, January 2016.

⁵² *Ibid.*

⁵³ Author’s interviews with Indian think tank experts, New Delhi, August 2015.

⁵⁴ This concern was raised multiple times in my meetings in New Delhi in August 2015.

While attentive to these scenarios, India does not pursue a multiple and simultaneous nuclear warfighting plan but instead adopts a lesser-included case model with a focus on China.⁵⁵ New Delhi demands an arsenal that could survive a Chinese attack and would like to retain rough parity with, or at least avoid too stark an inferiority relative to, Chinese capabilities.⁵⁶ Evidence for this interpretation is found in India's no-first-use (NFU) doctrine, minimum nuclear posture, and apparent lack of concern with, or response to, Pakistan's rapidly expanding nuclear arsenal and increasing emphasis on nuclear warfighting.

India's laser focus on China can also be seen in its skepticism about formal Chinese doctrine. Many in New Delhi worry, for example, that Beijing might consider conducting a nuclear first strike against the contested territory of Arunachal Pradesh using the argument that such a move would not violate China's NFU doctrine because the attack was not against an enemy but rather occurred on territory that China claims as its own.⁵⁷ Others have voiced similar concerns about a possible Chinese nuclear attack on Taiwan, but Beijing-based experts dismiss both scenarios as being far divorced from actual Chinese strategic thinking.⁵⁸

This is not to say that India does not devote any attention to Pakistan in its strategic nuclear planning. India maintains a formal NFU doctrine, as stated above, but experts in New Delhi warn that if the government had solid intelligence that a Pakistani nuclear attack were underway, there should be no doubt that India would attempt to stop the attack with a preemptive nuclear strike. Indeed, some in New Delhi see India's NFU doctrine as a sign of weakness that could undermine deterrence and advocate for abandoning this policy.⁵⁹

One must of course take outside analysis of any country's strategic nuclear plans and policy with a grain of salt, but this is especially true in New Delhi. India's nuclear strategy is formulated at the highest political levels, limiting the knowledge of the country's true doctrine, if one exists, even to high-ranking military officers. As one colleague in New Delhi explains, paraphrasing Lao Tzu's famous dictum, in India "he who knows doesn't speak, and he who speaks doesn't know."⁶⁰

Pakistan. Pakistan's nuclear planning and posture are focused squarely on India. In recent years, Pakistan has adopted a nuclear warfighting posture, and in the event of war it plans to use nuclear weapons on invading Indian forces on its own territory. Given its smaller size and geographic sphere of influence and its close strategic ties to nearby China, Pakistan does not appear to plan for the nuclear deterrence of any other state.

Pakistan does, however, likely account for at least one other state in its strategy: the United States. Historically, Washington has intervened in crises in South Asia to encourage restraint and promote de-escalation. Indeed, some have argued that Islamabad actively incorporated this possibility into its strategic planning and assumes that the United States would prevent any crisis from escalating too far. For this reason, Pakistani leaders may have believed that they could get away with a rapid *fait accompli* and that Washington's intervention would lock in the gains. This may have been part of the motivation behind the raid at Kargil in 1999. If that is the case, events

⁵⁵ Author's discussions in New Delhi, August 2015.

⁵⁶ Author's interviews with think tank experts in New Delhi, August 2015.

⁵⁷ This issue was raised multiple times in project workshops in New Delhi in August 2015.

⁵⁸ Author's telephone interview with a Chinese scholar and think tank expert, January 2016.

⁵⁹ Author's interview with a scholar in New Delhi, August 2015.

⁶⁰ Author's interview with a think tank expert in New Delhi, August 2015.

did not go according to plan.⁶¹ If nothing else, however, the crisis in Kargil teaches lessons about the future of nuclear multipolarity in Asia. States must increasingly incorporate multiple nuclear powers into their strategic doctrines. More specifically, states may increasingly employ nuclear threats to inveigle third parties into a dispute resolution role—a strategy that political scientist Vipin Narang has referred to as a “catalytic nuclear posture.”⁶²

Policy implications. The preceding discussion of nuclear planning and posture suggests a number of important policy implications for the United States. First, Washington must be prepared for nuclear escalation with a range of potential adversaries. Planning for the largest and most sophisticated nuclear adversary and assuming that this will also cover other, less capable adversaries is insufficient in a world with a diverse set of nuclear-armed rivals adopting a wide range of strategies and postures. The United States needs strategies, capabilities, and plans tailored for each adversary and for different possible combinations. At present, it must maintain, and should consider using if necessary, a nuclear preemption capability against North Korea. For its great-power rivals, Russia and China, the United States must develop the capabilities and strategy for fighting a limited nuclear war. It must also maintain capabilities and plans for a large strategic exchange, including a damage limitation approach. Of course, the purpose of these strategies and policies is not to fight a nuclear war but to deter one in the first place. Moreover, as explained in greater detail below, to effectively extend deterrence to its allies, the United States should also pursue a meaningful advantage in strategic capabilities over its East Asian rivals. Finally, to effectively tailor its strategy, a country must understand its adversary. Therefore, collecting intelligence on the nuclear strategies, doctrines, plans, and capabilities of the other nuclear powers must remain a priority.

Arms Races and Arms Control in a Multipolar Nuclear Asia

Russia, the United States, and NATO. The United States and Russia remain the largest nuclear powers in Asia, and upgrades to strategy and doctrine in either state could quickly trickle throughout the system. We may already be seeing some moves in this direction. As Russia has placed nuclear weapons at the center of its national security strategy and military doctrine, it has also upgraded its nuclear forces. Russia is modernizing all legs of its strategic triad, retaining tactical nuclear weapons, and testing new ground-launched cruise missiles in violation of the INF Treaty. While Russian experts tell Western colleagues that intermediate-range capabilities are intended to deal with the threat from China, they are also suited to holding at risk Western European capitals to provide cover to Russian aggression in its near abroad.

Russia’s changing nuclear strategy, combined with its increased belligerence, is slowly forcing changes in the West as the United States and its NATO allies devise strategies to counter this “escalate to de-escalate” strategy. According to this doctrine, Russia will employ limited nuclear strikes early in a conflict in a bid to force Western capitals to negotiate a hasty peace on terms favorable to Moscow. While there is growing consensus in the West about the reality of a renewed Russian nuclear threat, experts disagree about how best to respond. Many argue that changes to NATO’s nuclear doctrine and policy should be sufficient to reaffirm that the organization remains

⁶¹ Sumit Ganguly and S. Paul Kapur, *India, Pakistan and the Bomb: Debating Nuclear Stability in South Asia* (New York: Columbia University Press, 2010).

⁶² Narang, *Nuclear Strategy in the Modern Era*, 15.

a nuclear alliance and to make clear that any nuclear strike will be met with a nuclear response.⁶³ Others argue, however, that hardware changes are also needed.⁶⁴ It is not at all clear at present that NATO has a credible response to a Russian de-escalatory strike, and some are advocating for the development of more flexible nuclear options, such as lower-yield and highly accurate nonstrategic nuclear-strike options that are capable of penetrating Russia's advanced air defenses. In addition, some argue that the United States and NATO need to bolster their homeland and theater ballistic missile defenses. While ballistic missile interceptors could not offer a plausible defense against a full-scale Russian nuclear attack, they could complicate Moscow's calculations for, and thus perhaps deter, a more limited nuclear strike.

Furthermore, while the first and strongest instinct in Washington is to save the INF Treaty, some experts have argued that this might be an opportunity for the West to reconsider its unique restraint in the development of intermediate-range systems.⁶⁵ After all, every other major nuclear power in Asia, including potentially Russia, has intermediate-range missiles. Not only would these capabilities be useful to counter Russian nuclear threats, but the deployment of these missiles on the territory of Asian allies could be part of the U.S. effort to counter China's military buildup in Asia. In addition, Washington is exploring new capabilities such as hypersonic glide vehicles and a new air-launched cruise missile, which could provide greater accuracy and improved ability to penetrate enemy missile defenses.

China and the United States. Beijing cannot be expected to stand idly by as the United States increases its strategic capabilities. Already in recent years, China has gradually increased the size and sophistication of its nuclear forces to maintain a survivable arsenal in the event of possible conflict with the United States. China is, for example, moving to sea, developing and deploying new nuclear submarines. Perhaps most notably, it has created the "underground great wall," a vast network of three thousand miles of tunnels through which it moves mobile nuclear- and conventionally armed missiles. Some in the West incorrectly argue that China is content with a minimum deterrent, but, as discussed above, the more accurate translation of its force-sizing construct is "lean and effective." China has slowly increased the size of its nuclear forces as part of an effort to improve survivability.⁶⁶ Moreover, according to a Pentagon report, it has deployed missiles with MIRVed warheads and penetration aids on its silo-based ICBMs as a means of penetrating U.S. missile defenses.⁶⁷

If Washington proceeds, therefore, with proposals to augment its strategic forces in response to developments in Russia, or for other reasons, Beijing will take notice. The development of improved strike capabilities, including the possibility of regional intermediate-range forces and enhanced missile defenses, has already raised concerns in China about the survivability of its arsenal. It is difficult to predict exactly how Beijing will respond, but the continuation of programs to develop ballistic missile defense and hypersonic glide systems is likely. In addition, China could continue to

⁶³ Jacek Durkalec, "Nuclear-Backed Little Green Men: Nuclear Messaging in the Ukraine Crisis," Polish Institute of International Affairs, Report, July 2015.

⁶⁴ Steven Piifer et al., "Forum: NATO and Russia," *Survival* 57, no. 2 (2015): 119–44; and Clark Murdock et al., *Project Atom: A Competitive Strategies Approach to Defining U.S. Nuclear Strategy and Posture for 2025–2050* (Washington, D.C., and Lanham: Center for Strategic and International Studies and Rowman & Littlefield, 2015).

⁶⁵ Jim Thomas, "Why the U.S. Army Needs Missiles," *Foreign Affairs*, May/June 2013.

⁶⁶ Michael S. Chase, "China's Transition to a More Credible Nuclear Deterrent: Implications and Challenges for the United States," *Asia Policy*, no. 16 (2013): 70.

⁶⁷ A multiple independently targetable reentry vehicle (MIRV) is a ballistic missile containing several warheads that are each capable of being aimed at different nearby targets. Hans M. Kristensen, "Pentagon Report: China Deploys MIRV Missile," Federation of American Scientists, May 11, 2015, <https://fas.org/blogs/security/2015/05/china-mirv>.

slowly expand the size of its nuclear arsenal. Indeed, the country's expanding domestic capability to enrich uranium could easily be utilized for the production of fuel for nuclear warheads.⁶⁸

India and China. As stated above, China's investments in strategic technology have historically been driven by a desire to match the most advanced nuclear state. Beijing has paid relatively little attention to how its developments may affect New Delhi's strategic calculations, although some Chinese experts acknowledge that perhaps this is an issue that should receive greater attention.⁶⁹ Indeed, India's strategic capabilities are very much geared toward competition with China. The foremost goal is to field an arsenal capable of surviving a Chinese first strike. The second is to achieve rough parity with China, or at least not appear obviously inferior.⁷⁰ This latter goal is driven by several considerations, including national pride and the desire to emerge as a true regional power. India's plan to develop submarine-launched ballistic missiles, for example, will help match China's capabilities, ensure a survivable force, and complete the nuclear triad. In addition, the expansion of India's nuclear arsenal (which has increased over the past decade from an estimated 35 warheads to an estimated 110) is largely intended to close the gap with China rather than to race with Pakistan.⁷¹

Future developments in China, therefore, would likely provoke a response in India. The development of Chinese MIRVed warheads and ballistic missile defenses, and the possible deployment of nuclear-armed submarine-launched cruise missiles, could over time begin to call into question India's second-strike capability.⁷² In response to these developments, India might also develop missiles with MIRVed warheads, increase the size of its arsenal, or improve the capability of its delivery vehicles, including by adding cruise missiles, submarines, or aircraft.

India's nuclear doctrine also takes cues from Beijing. At present, New Delhi is content with its minimum deterrent posture and NFU doctrine, but if China were to abandon or change its interpretation of NFU, India would be compelled to reconsider its own doctrine.⁷³

Pakistan and India. There is also an ongoing arms race between India and Pakistan, but to date it appears that only Islamabad is cognizant of this fact. Pakistan is developing a warfighting capability and doctrine to counter India's substantial conventional military advantage. It is now estimated to have a larger nuclear arsenal than India (approximately 120 warheads), and some experts predict that Pakistan could have at least 350 nuclear weapons within five to ten years, making it the third-largest nuclear power.⁷⁴ Islamabad is expanding its plutonium-production capability, and some Pakistani generals have reportedly said that they dream of eventually possessing an arsenal numbering in the thousands.⁷⁵

As mentioned above, Pakistan's nuclear strategy calls for the battlefield use of nuclear weapons as a means to repel an Indian conventional invasion. At the same time, however, a nuclear warfighting capability also provides a potent deterrent that can provide a shield under

⁶⁸ Hui Zhang, "China's Uranium Enrichment Capacity: Rapid Expansion to Meet Commercial Needs," Harvard Kennedy School, Belfer Center for Science and International Studies, August 2015.

⁶⁹ Author's telephone interview with a Chinese think tank expert, January 2016.

⁷⁰ Author's interviews with experts in New Delhi, August 2015.

⁷¹ Shannon N. Kile and Hans M. Kristensen, "Appendix 12A. World Nuclear Forces, 2005," in *SIPRI Yearbook 2005: Armaments, Disarmament and International Security* (Oxford: Oxford University Press, 2005), 578–602.

⁷² Author's interviews with think tank experts in New Delhi, August 2015.

⁷³ Author's interview with a scholar in New Delhi, August 2015.

⁷⁴ Toby Dalton and Michael Krepon, "A Normal Nuclear Pakistan," Carnegie Endowment for International Peace and Stimson Center, 2015.

⁷⁵ Author's interviews in Washington, D.C., June 2015.

which Pakistan can engage in lower-level coercion of India. This doctrine and strategy pose a clear problem for India, but the country's leadership has not yet awoken to the threat. This may be in part because nuclear doctrine in India is formulated by politicians at the highest levels of government, and they, and their closest advisers, are not habituated to thinking about nuclear weapons in warfighting terms.⁷⁶

Meanwhile, Pakistan's nuclear capabilities are not standing still. Islamabad is also developing a sea-based leg. It is attempting to field a nuclear-armed submarine-launched cruise missile, with substantial assistance from Beijing in developing systems for communicating with submarines at sea.⁷⁷

Policy implications. The preceding discussion reveals that changes to Russian strategy and doctrine at the very top of Asia's nuclear system could very soon provoke a response in at least three and possibly four other nuclear powers. This outcome would complicate traditional thinking about arms races in terms of a bipolar dynamic of action and reaction and thus has obvious and immediate implications for U.S. policy. Washington must consider how changes to its own nuclear strategy and posture may trickle throughout the system and better anticipate the possible second- and third-order effects. The pursuit of homeland ballistic missile defense and conventional prompt global strike capabilities, for example, is likely to initiate a chain reaction that encourages several states to increase the size and sophistication of their nuclear arsenals. This probable outcome does not necessarily mean that the United States should not pursue these capabilities. Indeed, given growing threats from North Korea and elsewhere, it probably should. But Washington must also be aware of the possible consequences.

Moreover, given the centrality of China in Asia's overlapping nuclear dyads and triads, the intelligence community must continue to closely follow Chinese nuclear developments. China's choices about its nuclear posture bear directly on nearly all the latent and actual nuclear powers in Asia. So long as China is content with a lean and effective nuclear arsenal, Beijing may serve as a firebreak to a chain of action-reaction adjustments to strategic posture. While China has slowly expanded and modernized its nuclear arsenal in recent years, there is no indication that it is moving from the lean and effective force-sizing construct.⁷⁸ But if China were to change course and sprint to quantitative or qualitative parity with Russia and the United States—or worse, strive for superiority over them—a widespread Asian nuclear arms race would be much more likely.

This discussion also bears on the future of nuclear arms control in the region. At first blush, the prospects for arms control appear bleak. Many of the Asian nuclear powers, including Russia and Pakistan, view a robust nuclear force as a means of dealing with conventional inferiority. This will make them reluctant to sign on to any nuclear arms control agreements, or at least those that are narrowly focused on nuclear reductions. After all, equivalent nuclear reductions with their conventionally superior rivals systematically undermine their national security strategies.

Moreover, given the interactions in the system, arms control agreements may not be very useful unless they can be expanded to include the multitude of nuclear-relevant actors in Asia. But the more parties are included in negotiations, the more difficult it will be to achieve agreement. Indeed, China may be the key to future arms control agreements. It is the world's third-largest

⁷⁶ Author's interviews with think tank experts in New Delhi, August 2015.

⁷⁷ Ibid.

⁷⁸ Fiona S. Cunningham and M. Taylor Fravel, "Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability," *International Security* 40, no. 2 (2015): 7–50.

nuclear power, behind only Russia and the United States, and sits at the center of Asia's overlapping strategic nuclear triangles. To date, however, Beijing has been unwilling to seriously discuss arms control. Chinese officials argue that this reticence will continue until the size of Russian and U.S. nuclear arsenals shrinks to yet unspecified levels. But a reluctance to be transparent about strategic capabilities has been an inherent part of Chinese strategic culture since at least the time of Sun Tzu, and Beijing may simply believe that deterrence and stability are best preserved by creating uncertainty about one's capabilities and intentions.⁷⁹ Indeed, this may be one of the new characteristics of contemporary multipolarity. Several of the new nuclear powers, including North Korea, believe that security is best achieved through opacity.

Nevertheless, there may be some reason for hope that a multipolar nuclear Asia can provide opportunities for new and creative arms control arrangements. First, countries could pursue treaties that prescribe different levels of capabilities for different categories of states. Historically, we have seen treaties that follow this formula, including the NPT and the Washington Naval Treaty. Chinese protestations aside, there is no inherent reason that Russian and U.S. numbers must decline before China, India, and Pakistan agree to place negotiated limits on their own arsenals.

Second, given that some states are pursuing, or at least considering, the development of advanced capabilities in response to developments in rival states, there may be an opportunity for dual-track negotiating strategies. Washington should give these possibilities further consideration. For example, it could plan for the development of intermediate-range missiles (with both conventional and nuclear capabilities) unless Moscow is willing to come back into compliance with the INF Treaty.⁸⁰ Although more of a stretch, Washington could also use the threat to deploy these capabilities in Asia as a means to pressure China to consider joining an INF-like treaty for Asia. Intermediate-range ground-launched missiles could be helpful to U.S. deterrence and assurance missions in the region. Moreover, given that Moscow and Beijing have much more to lose than Washington from an unrestricted intermediate-range nuclear arms race in Eurasia, the threat to develop and deploy these weapons may be a significant source of leverage.⁸¹

Third, states could consider trades in unlike capabilities. To deal with states that rely on nuclear weapons as an asymmetric tool against conventional superiority, diplomats may want to consider asymmetric agreements that trade conventional limitations for nuclear restraint. For example, the United States could make the deployment of conventional forces in Eastern Europe conditional on changes to Russia's nuclear posture. Specifically, Washington could discuss with Moscow the possibility of limiting permanent deployments in exchange for reductions of Russian tactical nuclear capabilities.

Finally, given that arms races in a multipolar world may start from the bottom up, the United States should devote greater attention to promoting and mediating arms control arrangements between and among states at the lower rungs of Asia's nuclear hierarchy, such as India and Pakistan. The prospects for traditional bilateral arms reduction treaties between Washington and Moscow appear to have dimmed, at least for the moment, but the United States can seek to implement arms control measures among third parties that would enhance U.S. and global security in the near term while potentially paving the way for more multilateral arrangements. Such deals could be facilitated by including tradeoffs in unlike capabilities. For example, Pakistan could consider a

⁷⁹ Sun Tzu, *The Art of War*, trans. Ralph D. Sawyer (Boulder: Westview Press, 1994).

⁸⁰ Elbridge Colby, "The Real Trouble with Russia," *Foreign Affairs*, April 7, 2014.

⁸¹ Thomas, "Why the U.S. Army Needs Missiles."

cap on its plutonium production in exchange for India placing a larger share of its fissile material under International Atomic Energy Agency (IAEA) safeguards.⁸²

In sum, countries must be realistic about what arms control agreements can achieve. Arms races are generally a response to, rather than a cause of, underlying geopolitical tensions. Nevertheless, carefully constructed agreements could take the edge off geopolitical rivalries and advance U.S. interests. In the end, new arrangements may not prove desirable or feasible, but they should at least receive serious consideration before such a determination is made.

Nuclear Escalation in a Multipolar Asia

A study of nuclear dynamics must also consider the possibility of crisis escalation and nuclear exchange. Many prefer to avoid “thinking the unthinkable,” but it is necessary if we are to fully understand nuclear competitions.⁸³

The greatest risk of nuclear war in the world today is possibly not in Asia but between Russia and NATO. If Putin were to rerun his playbook from Ukraine against a NATO country, there would be a significant risk of nuclear escalation.⁸⁴ While this scenario would be unlikely to directly involve the major Asian powers, one can imagine several other scenarios for nuclear escalation in Northeast Asia, South Asia, and the Middle East.

Northeast Asia. Among the most dangerous flashpoints is the Korean Peninsula. North Korea has engaged in a number of provocations against South Korea in recent years, including the sinking of the *Cheonan* and the shelling of Yeonpyeong Island. It is likely that such militarized disputes will continue in the future. Indeed, while unlikely, it is possible that in a future crisis deterrence would fail and North Korea would use nuclear weapons against South Korea or U.S. forces in the region.

In this scenario, Washington would certainly plan for a strong military response against Pyongyang. Indeed, the key question would likely be whether an overwhelming conventional response, including possible regime change, would suffice or whether nuclear retaliation would also be necessary. It is quite plausible that a U.S. president might decide that any nuclear attack must be met with a nuclear response in order to maintain the credibility of the United States’ nuclear commitments globally.

In this event, how would the other Asian nuclear powers respond? It is hard to imagine that Russia and China, two nuclear powers bordering North Korea, would simply sit on the sidelines. It is possible that they would join Washington in condemning the North Korean attack and back a tough response from the United States. More likely, however, they would use diplomatic means in an attempt to tame the U.S. response and de-escalate the situation.⁸⁵

But what if these diplomatic overtures fail to convince Washington to refrain from significant retaliation? Would Moscow and Beijing back down, or could they decide to use military coercion in an attempt to deter a U.S. counterattack against North Korea? Moscow may be unlikely to take this step, but it is at least plausible that Beijing would intervene on behalf of Pyongyang and attempt

⁸² Author’s interview in Washington, D.C., February 2016.

⁸³ See Herman Kahn, *Thinking about the Unthinkable in the 1980s* (New York: Simon and Schuster, 1984).

⁸⁴ Matthew Kroenig, “Facing Reality: Getting NATO Ready for a New Cold War,” *Survival* 57, no. 1 (2015): 49–70.

⁸⁵ Author’s telephone interviews with Russian and Chinese scholars, January 2016.

to deter a U.S. nuclear response.⁸⁶ This is an understudied path by which two nuclear-armed superpowers of Asia could come head-to-head during a peak crisis.

Other flashpoints in Sino-U.S. relations, including a North Korean regime collapse, disputes in the South China Sea, and clashes over the status of Taiwan, could also lead to nuclear escalation. Perhaps the most likely near-term confrontation with the potential for nuclear escalation centers on the historical dispute between China and Japan.⁸⁷ The two countries nearly came to blows several years ago over competing claims to the Senkaku/Diaoyu Islands. After the crisis, President Barack Obama clarified that the United States' security guarantee to Japan did extend over the islands. Thus, a future crisis between China and Japan could eventually mean war between the United States and China, a conflict that Beijing would view as carrying extremely high stakes.

South Asia. Moving south, it is difficult at present to foresee the possibility of a nuclear crisis between China and India. The two states fought a border war in 1962, but since that time, their relations have been fairly stable, and there are no signs of imminent militarized disputes. As mentioned above, India worries that a future conflict with Pakistan could tempt Chinese aggression in the north, but Beijing dismisses such concerns.⁸⁸

Unfortunately, the possibility of a nuclear crisis between India and Pakistan cannot be as easily dismissed. Perhaps the most likely road to conflict would begin with a Pakistan-based group conducting a terrorist attack in India that prompts the country to retaliate with conventional forces, causing Pakistan to conduct a nuclear first strike on Indian military units. In addition, New Delhi worries about the possibility of a nuclear terrorist attack.⁸⁹ Such an event could lead to rapid escalation, especially if the source of the nuclear weapon or material could be easily traced back to Pakistan.

Fortunately, unlike the Northeast Asia scenarios mentioned above, it is difficult to see how a nuclear conflict beginning in South Asia could escalate to involve multiple nuclear powers as belligerents. To be sure, Washington would likely intervene diplomatically early in any South Asian crisis in an attempt to tamp down tensions. This would be the correct approach, and Washington should take steps to prepare for such a scenario, including developing emergency "break glass" playbooks for how to deal with a future nuclear crisis or exchange.

Middle East. At present, the risk of nuclear escalation in the Middle East, the westernmost reaches of Asia, is low. Israel is the sole nuclear power in the region, reducing the most intense pressures for nuclear crisis escalation.⁹⁰ The recently signed JCPOA appears to have reduced the risk of Iranian nuclear acquisition, at least in the short term. If in the future Iran were to acquire nuclear weapons, however, the situation would become much more dangerous. The Israeli-Iranian nuclear balance would be much less stable than other nuclear dyads.⁹¹ Moreover, the United States would likely be pulled into any nuclear crisis as a partner to Israel and could become a security guarantor of other regional states. If U.S. nuclear security guarantees failed to prevent further proliferation in the region, then future crises could involve other nations, including Turkey,

⁸⁶ Author's telephone interviews with Russian and Chinese scholars, January 2016.

⁸⁷ Author's telephone interview with a Chinese think tank expert, December 2015.

⁸⁸ Author's interviews with Indian experts, New Delhi, August 2015; and author's telephone interview with a Chinese expert, January 2016.

⁸⁹ This issue was raised with surprising frequency in my meetings in New Delhi in August 2015.

⁹⁰ Paul Avey, "The Pacifying Effects of Inadvertent Escalation" (unpublished manuscript).

⁹¹ Matthew Kroenig, *A Time to Attack: The Looming Iranian Nuclear Threat* (New York: St. Martin's Press, 2014); and Eric S. Edelman, Andrew F. Krepinevich Jr., and Evan Braden Montgomery, "The Dangers of a Nuclear Iran: The Limits of Containment," *Foreign Affairs*, January/February 2011.

Egypt, Saudi Arabia, and the United Arab Emirates, as nuclear-armed participants. Clearly, such multipolar nuclear crises in the Middle East could portend the greatest possible danger of escalation, which is one among many reasons that Washington must continue to stick to a firm policy of preventing Iran from acquiring nuclear weapons. Diplomacy is the preferred method, but the military option must remain on the table.⁹²

Policy implications. The preceding discussion demonstrates that the failure of deterrence in a multipolar nuclear Asia is not unthinkable. Washington must therefore take steps to reduce this probability still further. Deterrence begins with preventing the initiation of low-level conflicts, and Washington and its allies should ensure the conditions for tactical deterrence. To deter nuclear escalation against the United States or its allies, Washington must maintain a robust strategic nuclear arsenal and ensure that it possesses flexible nuclear forces capable of providing a credible response to deter possible contingencies.

Moreover, given the inherent instabilities in the region, Washington should engage in scenario planning for the possibility of deterrence failure. This subject, perhaps due to its macabre nature, is not given the attention it deserves. But the United States needs to engage in much closer consultation with allies, partners, and even potential adversaries about how it might respond in the wake of a nuclear exchange in a variety of scenarios. Such discussions will no doubt be difficult, but it would be irresponsible for Washington not to make adequate plans for foreseeable scenarios with severe consequences for U.S. interests and global order. Specifically, in diplomatic exchanges and Track 2 dialogues, the United States and its allies must focus greater attention on the possible failure of deterrence and consider the most desirable response options. Working out differences and settling on a range of acceptable outcomes now is much better than waiting until the heat of a crisis. In addition, Washington must engage Beijing and perhaps Moscow on the specific threat of North Korean nuclear use and socialize them to the idea that a U.S. nuclear response may be required in such a scenario. Finally, Washington should not let a good crisis go to waste. Most of the elements of the current nonproliferation regime were developed in immediate response to a major threat to international peace. For example, the 1963 Limited Nuclear Test Ban Treaty was adopted in the wake of the Cuban Missile Crisis, and the Nuclear Suppliers Group followed India's nuclear test in 1974. Washington should develop bold plans for strengthening the nonproliferation regime, such as by closing the loophole in Article IV of the NPT, which has allowed countries like Iran to develop the capability to cross the nuclear weapons threshold. Even if these proposals could not receive international support at present, there may be opportunities in the wake of a crisis to achieve international consensus for their implementation.

The Challenge of Extended Deterrence and Assurance in Asia

Extended deterrence. If the number and significance of nuclear threats in Asia increase, the ability of Washington to provide an effective extended deterrent may decrease. For this reason, the greatest near-term challenge to U.S. extended deterrence in Asia is the growing size and sophistication of Chinese and North Korean military capabilities. Indeed, the current security order in Asia has been premised for decades on unquestioned U.S. primacy. Developments that erode U.S. primacy threaten that order. To extend deterrence effectively, therefore, it is imperative that the United States maintain a clear strategic superiority over Asian rivals. Providing extended

⁹² Kroenig, *A Time to Attack*.

deterrence is, in essence, a promise to risk nuclear war on behalf of allied states. The threat to adversaries and promise to allies is weakened, however, to the degree that nuclear-armed rivals have the ability to target the U.S. homeland.

Just over one decade ago, the United States maintained a possible nuclear first-strike advantage against China, and even if Beijing were to strike first, China only possessed about 20 warheads capable of reaching the continental United States.⁹³ As China slowly modernizes its deterrent, including with mobile missiles, tunnels, and nuclear-armed submarines, the United States has lost the ability to conduct a disarming first strike on China's nuclear forces. Moreover, Beijing's slow buildup means that it can target the U.S. mainland with an estimated 50 or more warheads.⁹⁴

Some have argued that in practice the United States and China have entered a state of "mutual vulnerability" and Washington should formally acknowledge this fact. This raises two questions. First, to what degree is the United States vulnerable to Chinese nuclear forces? Second, is it prudent to publicly acknowledge this state of affairs?

There is no doubt that the United States is vulnerable to China's nuclear forces, but it is critical to note that this is an asymmetric vulnerability. At present, China would suffer more in the event of a Sino-U.S. nuclear exchange. As I have shown in my work on nuclear deterrence, nuclear superiority matters.⁹⁵ Even if states are unwilling to intentionally start nuclear wars, they are willing to risk them, and the risk they are willing to run depends on not only political stakes but also the costs of a potential nuclear exchange. The greater the degree of U.S. superiority over China, the greater the risks the United States can threaten to run in Asia, enhancing extended deterrence and assurance. Moreover, since many argue, probably correctly, that Beijing inherently has a greater stake in security arrangements in its own backyard, Washington must to some degree compensate for its resolve deficit with a capabilities surfeit.

To be sure, it is unlikely that Beijing will permit Washington to achieve a clear first-strike advantage. For this reason, the only stable nuclear balance in East Asia going forward may be one in which China possesses an assured retaliation capability while the United States maintains a clear strategic nuclear advantage.⁹⁶ In other words, it must be clear to all that both the United States and China would suffer greatly in a nuclear exchange, but that China would suffer worse. Washington not only must maintain numerical superiority; it also must develop a strategy and the capabilities for damage limitation, including counterforce capabilities, buttressed by a concerted intelligence and reconnaissance effort to track and target China's mobile forces. Furthermore, it must continue to enhance its theater and homeland ballistic missile defenses to deter a nuclear strike. U.S. adversaries are developing defenses with the United States in mind, so it is unclear why Washington should be so uncomfortable about doing the same.

Some may argue that the United States was able to extend deterrence during the Cold War even though it lacked a clear nuclear superiority over the Soviet Union for long stretches. There is some truth to this claim, but this task would have certainly been easier from a superior position. Moreover, this argument overlooks the fact that there was slippage in the Cold War model of extended deterrence. London and Paris were not willing to rely on the U.S. nuclear umbrella and

⁹³ Hans M. Kristensen, Robert S. Norris, and Matthew G. McKinzie, *Chinese Nuclear Forces and U.S. Nuclear War Planning* (Washington, D.C.: Federation of American Scientists/Natural Resources Defense Council, 2006), 160–69.

⁹⁴ Hans M. Kristensen and Robert S. Norris, "Pakistani Nuclear Forces, 2015," *Bulletin of the Atomic Scientists*, November/December 2015.

⁹⁵ Kroenig, "Nuclear Superiority and the Balance of Resolve."

⁹⁶ For a similar argument, see James Steinberg and Michael E. O'Hanlon, *Strategic Reassurance and Resolve: U.S. China Relations in the Twenty-First Century* (Princeton: Princeton University Press, 2014).

eventually built independent nuclear forces. Furthermore, there were several serious crises that coincided with the deterioration of the United States' early nuclear advantage. Allowing U.S. superiority in Asia to erode, therefore, may have similar effects, leading to some allied nuclear proliferation in Asia and heightening the risk of crisis and, in turn, war. This is an experiment that Washington should avoid if at all possible.

Second, on the question of public diplomacy, Beijing would very much like Washington to admit a situation of mutual vulnerability, but this would also be unwise. In practice, such a confession would be at least a partial falsehood because, as explained above, the situation is better characterized as mutual but highly asymmetric vulnerability. Furthermore, the United States would gain little, if anything, from making such a confession, but it would greatly unnerve regional allies.

North Korea's nuclear buildup also poses a challenge to extended deterrence in Asia. According to the best open source estimates, North Korea possesses enough fissile material for up to nearly 30 nuclear weapons.⁹⁷ Moreover, according to a U.S. Department of Defense official, North Korea now has the ability to deliver a nuclear warhead to the continental United States.⁹⁸ Some have argued that the ability of U.S. adversaries to hold the continental United States at risk will not change the fundamental logic of deterrence, but this betrays less than a full appreciation of the nuances of deterrence strategy.⁹⁹ As explained above, much of the action of nuclear deterrence occurs in the gray zone between peace and thermonuclear war. In these games of nuclear brinkmanship, the key question is what levels of risk the participating states are willing to run before capitulating. It is clear that any U.S. president will be more cautious as the threat to the U.S. homeland increases.

Washington, therefore, must also seek clear superiority over North Korea. On this front, a disarming counterforce capability is within reach, and the United States should actively pursue it by developing war plans for neutralizing North Korea's arsenal, counterforce capabilities, and theater and homeland ballistic missile defenses.

In sum, maintaining clear U.S. nuclear superiority over China and North Korea greatly contributes to effective extended deterrence in Asia. This is why the United States, the only country that extends its nuclear umbrella to many countries around the world, has always taken a different view toward nuclear posture and strategy than major powers such as China.¹⁰⁰ Detering nuclear attacks against over 30 states requires a different arsenal from what is required to deter an attack against only one state.¹⁰¹ To justify the pursuit of continued U.S. strategic advantages, Washington must do a better job of communicating in international forums the unique demands imposed by its need to maintain extended deterrence.

For the above reasons, possible reductions in U.S. nuclear capabilities are met with suspicion in Asia, and Washington should be cautious about discussing further strategic cuts.¹⁰²

⁹⁷ David Albright and Christina Walrond, "North Korea's Estimated Stocks of Plutonium and Weapon-Grade Uranium," Institute for Science and International Security, August 16, 2012, http://isis-online.org/uploads/isis-reports/documents/dprk_fissile_material_production_16Aug2012.pdf.

⁹⁸ Jethro Mullen, "North Korea Says It Can Miniaturize Nuclear Weapons," CNN, May 20, 2015.

⁹⁹ Robert A. Manning, *The Future of U.S. Extended Deterrence in Asia to 2025* (Washington, D.C.: Atlantic Council, 2014).

¹⁰⁰ Kroenig, "Nuclear Superiority and the Balance of Resolve."

¹⁰¹ This number includes the 27 members of NATO, plus Australia, Japan, the Philippines, and South Korea in Asia.

¹⁰² Author's meetings in Seoul, August 2015; and author's conversations with Japanese colleagues, January 2016.

Allies understand that conventional weapons and missile defenses have a role to play in extended deterrence, but these cannot supplant the role of nuclear weapons.

Assurance. The corollary to extended deterrence is assurance. Here, additional steps may be needed. Perhaps the most important near-term driver of horizontal proliferation in Asia could come from vertical proliferation within an existing nuclear power: North Korea. If North Korea's nuclear arsenal continues to expand in size and sophistication, the pressure on regional adversaries, most notably South Korea and Japan, to build independent arsenals may increase. Furthermore, if Pyongyang acquires ICBMs capable of targeting the continental United States, the credibility of Washington's security guarantees will increasingly be called into question.

On the other hand, if the North Korean regime were to collapse, leading to a unified and denuclearized Korean Peninsula, one of the most important drivers for nuclear proliferation in Northeast Asia would be eliminated.¹⁰³ Developing a strategy to roll back North Korea's nuclear capability, while difficult, could go great lengths toward assuring the United States' regional allies. The successful conclusion of the Iran nuclear deal led them to infer, probably incorrectly, that if the United States really wants something, it can get it.¹⁰⁴ Nevertheless, it was not lost on U.S. allies in Asia that, unlike in Iran, Washington has not made rolling back North Korea's nuclear program a top priority of its foreign policy for over a decade. Going forward, to reduce the pressure on Japan and South Korea to acquire independent nuclear arsenals, Washington should more clearly articulate a long-term policy of peacefully unifying and denuclearizing the Korean Peninsula and take steps to work actively toward that goal. Although the Obama administration has voiced a similar objective, in practice this has been overshadowed by another stated approach of "strategic patience," a doctrine that essentially amounts to standing idly by as threats gather. A different approach would require making the rollback of North Korea's nuclear program a clear and overriding objective and taking visible steps to turn up the pressure on Pyongyang.

The United States should study the possibility of a strategy, based on the Iran nuclear diplomacy model, for the rollback of North Korea's nuclear program. The study could examine, among other issues, the possibility of building international consensus for a dual-track approach that brings sustained and, over time, increased pressure on North Korea as long as it retains and expands its nuclear program, while always holding out the possibility of a peaceful agreement that includes denuclearization. Washington may be able to use the threat of closer cooperation with the ROK to deal with the North Korean nuclear challenge, including the deployment of Terminal High Altitude Area Defense (THAAD) and other military capabilities, as a means to encourage Chinese support in increasing pressure on Pyongyang. Given that North Korea's program is so far advanced, this will no doubt be a heavy lift, but the potential payoff in terms of East Asian security is worth the effort.

The United States must also prioritize its credibility and avoid policy decisions that could call into question its global commitments, such as the Syria red line debacle. In addition, the United States should reverse the damage done to the credibility of its extended deterrent by reducing reliance on nuclear weapons in the U.S. nuclear posture across multiple administrations. To effectively assure regional allies, the United States needs to update its declaratory policy to reaffirm the central role of nuclear weapons in extended deterrence in Asia. The U.S. secretary of defense

¹⁰³ For more on the importance of North Korea to the future of Asia, see Nicholas Eberstadt and Richard J. Ellings, "Assessing Interests and Objectives of Major Actors in the Korean Drama," in *Korea's Future and the Great Powers*, ed. Nicholas Eberstadt and Richard J. Ellings (Seattle: National Bureau of Asian Research with University of Washington Press, 2001), 315–42.

¹⁰⁴ Author's interviews in Seoul, August 2015.

should have regularized consultations with the defense ministers from Japan and South Korea (and perhaps other regional powers, such as Australia) on strategic issues in a forum similar to the NATO Nuclear Planning Group. Meetings at this level currently take place on these issues but often occur in a bilateral setting. There would be value in bringing all parties together at the same table to discuss these issues. Further, Washington, Seoul, and Tokyo could consider the negotiation of an addendum to their mutual defense treaties that includes a clause modeled on Article V of NATO that states that an attack on one party is an attack on all and provides a clear means for threatened allies to request the help of the alliance.

Further, the United States could strengthen assurances with upgrades to its nuclear capabilities and changes to its crisis signaling in the region. While some in South Korea were reassured by the U.S. B-2 flights over the Korean Peninsula in response to Kim Jong-un's nuclear threats in spring 2012, others saw this as illustrative of the wedge that the North could drive between the United States and the South.¹⁰⁵ The United States signaled with strategic capabilities based in the United States. What did this decision reveal about the cohesion of the alliance between Seoul and Washington and their shared resolve to stand up to Pyongyang? Did it signal a decoupling of Asia's security from U.S. strategic forces? In future crises, Washington should consider signaling with the forward-deployable tactical nuclear capabilities promised in the 2010 U.S. Nuclear Posture Review rather than with U.S.-based strategic forces. At present, however, the promise of deployable nuclear weapons in Asia is an empty one. The United States should take steps to make credible this stated policy by, among other measures, refurbishing weapons storage areas in the region and exercising dual-capable aircraft.

The United States must also consider the development of other tactical nuclear capabilities, especially because this type of more tailored capability would be helpful for dealing with problems posed by Russia's "escalate to de-escalate" strategy in the European theater.¹⁰⁶ Some in Japan have expressed a desire for the United States to bring back a nuclear-armed sea-launched cruise missile.¹⁰⁷ Washington should seriously consider this and other options, including carrier-based, nuclear-capable F-35s and intermediate-range ground-launched missiles, to match similar capabilities in China and North Korea.

Some in Seoul have argued that South Korea should enhance its own retaliatory capability in the form of a more robust conventional strike.¹⁰⁸ If one cannot count on U.S. nuclear forces, but preemption and effective defense are beyond the reach of South Korea's capabilities, then conventional-strike capabilities give Seoul its own deterrence-by-punishment capability. It would certainly be much better to deter conflict on the Korean Peninsula at the lowest levels before it escalates to possible nuclear exchange. To this end, Washington and Seoul must work together to ensure that the South Korean defense budget is optimized to reinforce U.S. capabilities. In 2012, the two allies reached an agreement that would allow South Korea to extend the range of its short-range ballistic missiles from three hundred to eight hundred kilometers. At present, however, the risks of uncontrolled escalation, as well as of unnerving neighboring U.S. ally Japan, by allowing Seoul to further expand this strike capability outweigh the benefits of enhanced deterrence, but this possibility should be revisited in the future.

¹⁰⁵ Author's interview with a former senior U.S. official, November 2015.

¹⁰⁶ Kroenig, "Facing Reality."

¹⁰⁷ Author's interview with Japanese think tank expert, Washington, D.C., January 2016.

¹⁰⁸ Author's interviews with former government officials, Seoul, August 2015.

In addition to an unfavorable nuclear balance of power and possibly inadequate tactical defenses, tensions among the allies themselves are another potential threat to nuclear assurance. The extension of deterrence to both South Korea and Japan is complicated by the strained relations between the two nations.¹⁰⁹ Historical animosities run deep. In addition, the countries are kept apart by the territorial dispute over the status of the Liancourt Rocks (islets known as Dokdo in Korea and Takeshima in Japan).

While nowhere near resulting in conflict, these tensions are causing insecurities that threaten alliance cohesion. There is a strong perception in Seoul that South Korea is less valuable to the United States than Japan is and always will be.¹¹⁰ Japan possesses a larger economy and is better situated geographically for dealing with Washington's primary security concern in the region, the rise of China. The fact that the United States has a combined military command with South Korea, and not Japan, apparently has not assuaged such concerns. Furthermore, South Korea is worried about the recent changes to Japan's defense guidelines, which will begin to unshackle the Japanese military from the restrictions placed on it in the immediate aftermath of World War II, potentially foreshadowing a reduced U.S. presence in the region and the return of a more threatening Japan.

For its part, Japan is concerned about the development of a South Korean conventional-strike force.¹¹¹ Even under current restrictions, the ROK's short-range missiles, sufficient to reach deep within North Korea, would also provide a more robust strike capability against Japan. Moreover, these missiles fall within ranges banned by the INF Treaty, causing some in Tokyo to fear that this precedent could give Moscow an excuse to deploy forces that are similarly capable of holding Japan at risk.¹¹²

Having an important ally feel that it is consigned to a perennial second-class status or having two allies view each other as potential military threats, or instigators of a regional arms race, is not helpful for alliance management. Washington must work to counteract the perception that it plays favorites among its allies. In addition, the United States should show a greater sensitivity to the real issues at stake in ROK-Japan animosity. At the same time, it should continue to cultivate a true trilateral relationship with Japan and South Korea, including, most importantly, in terms of regional defense strategy and posture.

U.S. concerns. Even more monumental tensions potentially lurk between the patron and client state. It is often said that fears of entrapment and abandonment are inherent in alliance relationships, with the patron fearing the former and the ally the latter.¹¹³ Paradoxically, in contemporary Washington it is the patron that sometimes fears abandonment. As trade ties rapidly expand and relations slowly improve between China and traditional U.S. treaty allies, including most notably South Korea, some in Washington question the loyalty of these allies. As one former U.S. official with responsibility for Asia said, "the United States may put up a nuclear umbrella in Asia and there are no countries that want to get underneath it."¹¹⁴

While Washington's concerns about a crumbling Asian alliance architecture are understandable, the worst-case fears are overblown. Security concerns generally trump economic interests, and

¹⁰⁹ Victor D. Cha, "Powerplay: Origins of the U.S. Alliance System in Asia," *International Security* 34, no. 3 (2009/2010): 158–96.

¹¹⁰ Author's interviews in Seoul, August 2015.

¹¹¹ Author's interview with a Japanese think tank expert, Washington, D.C., January 2016.

¹¹² *Ibid.*

¹¹³ Victor D. Cha, "Abandonment, Entrapment, and Neoclassical Realism in Asia: The United States, Japan, and Korea," *International Studies Quarterly* 44, no. 2 (2000): 261–91.

¹¹⁴ Author's interview in Washington, D.C., Spring 2014.

for this reason South Korea will likely continue to prioritize its security relationship with the United States over its economic exchange with China.¹¹⁵ Moreover, as the military threat from China grows, Seoul's desire for close relations with, and its value to, Washington will only increase.

That is not to say, however, that South Korea could not do more to contribute to the alliance's objectives. For example, Seoul could play a more active role in regional diplomacy, such as by speaking out against Chinese aggression in the South China Sea. There have been significant efforts to move Seoul in this direction, but to date it has preferred to hedge on China and remain focused on North Korea. If South Korea wants to increase its value in Washington's eyes, it can do more to advance U.S. goals in the region.

Still, such day-to-day alliance friction is to be expected and likely pales in comparison with some of the larger challenges the alliance relationship could face over time. Perhaps most shocking to the relationship would be discussions about how to respond in the event that the nuclear deterrence strategy that helps undergird the relationship fails. Would the United States and its Asian allies see eye to eye on the appropriate response to an adversary attack? My Japanese contacts have argued that Tokyo would demand a nuclear reprisal.¹¹⁶ Indeed, they would strongly prefer a strategy for nuclear preemption because Japan cannot afford to absorb a nuclear attack. It is notable that in Seoul very little serious consideration seems to have been given to how the alliance should respond if nuclear deterrence were to fail and North Korea were to attack South Korea or U.S. Forces Korea with nuclear weapons. In the event of such an attack, would Seoul prefer a strong conventional reaction or a limited nuclear response? Or would it depend on the circumstances?

Some in Seoul argue that a nuclear response would be necessary because that is the entire purpose of a nuclear security guarantee.¹¹⁷ Others argue that they would not want to see their co-nationalists across the border subjected to nuclear horrors and that they would fear the effects of fallout potentially drifting back across the border. Further, devastating the North with nuclear strikes could complicate the eventual goal of peaceful reunification. For this reason, analysts in this group would prefer a strong conventional response. And others have not thought deeply about the matter or have not yet made up their minds. Indeed, in one conversation, a South Korean interlocutor began an answer to this question by insisting on a nuclear response, but by the end of his train of thought had come down on the side of preferring a strong conventional reprisal.

But is the thinking in Washington any more developed? No doubt, in the aftermath of such a terrible tragedy, a U.S. president would also hear competing recommendations from advisers for both nuclear and nonnuclear responses. There is, however, one significant systematic difference between nuclear patron and nuclear client, which, as explained above, is that the nuclear patron must also consider how a response may affect its broader strategy and goals in other settings. Lack of alliance cohesion on a clear response, especially if evident before a crisis, could weaken both nuclear assurance and deterrence.

One solution, therefore, may be for the United States to leverage existing forums, such as the U.S.-Japan Extended Deterrence Dialogue and the U.S.-ROK Deterrence Strategy Committee, to bring its allies into more detailed discussions about scenario-specific planning, including the appropriate response to a nuclear attack. It is much too early for joint military planning, but this

¹¹⁵ Author's interview in Seoul, August 2015.

¹¹⁶ Author's interview with a Japanese think tank expert, Washington, D.C., January 2016.

¹¹⁷ Author's meetings in Seoul, August 2015.

should not stop Washington from candidly sharing its thinking on these issues. Dialogues on these precise topics should also be facilitated by ongoing Track 2 programs.

Turning to the Middle East, nuclear assurance is not yet an issue. If Iran were to acquire nuclear weapons, however, Washington would need to fundamentally rethink its assurance policy in the Middle East. This might include the consideration of formal security guarantees for Israel and the Gulf states and the forward deployment of U.S. forces, including possibly nuclear forces, in the region. To forestall such an undesirable outcome, Washington must be clear that if the limits on Iran's nuclear program under the JCPOA are contravened, due to either Iranian cheating or the expiration of the sunset provisions, then Washington will be willing to do whatever it takes to stop Iran from building nuclear weapons.

The Threat of Proliferation in Contemporary Asia

Which countries are the next nuclear proliferators in Asia? Is the number of nuclear powers in the region capped? Or could developments in North Korea, Iran, or elsewhere contribute to a cascade of nuclear weapons proliferation throughout the region? Most likely the reality is somewhere in between, with a reasonable expectation being a slow trickle of one or two additional powers joining the nuclear club in Asia with each passing decade. There is, however, some danger that Asia could see widespread and relatively rapid proliferation for at least two reasons. First, the region already contains multiple states with the industrial capacity required to develop an indigenous nuclear weapons production program. Second, it will likely witness intensifying great-power political rivalries in the coming years, and nuclear weapons remain the ultimate instrument of military force and, therefore, geopolitical competition.

In the near term, the greatest risk of proliferation may be in East Asia. South Korea and Japan considered developing nuclear weapons in the past but refrained for various reasons. Both possess the industrial capacity to develop nuclear weapons in short order if they were to decide to do so. The only remaining hurdle between these states and the bomb, therefore, is political. With potential nuclear threats from China and, since 2006, North Korea, both states have a security incentive to build nuclear weapons to serve as an independent deterrent. Of course, each state's security environment is slightly different: Japan is relatively more focused on the threat from China, while South Korea is more concerned with its northern neighbor. Yet, to some degree, both face multiple nuclear-armed rivals. Moreover, South Korea and Japan hold historical animosities toward one another and maintain tense relations today despite their shared alliance with the United States. If one of these states were to go nuclear, the pressure on the other to follow suit would drastically increase.

South Korea. Concerns about South Korea's nuclear intentions have resurfaced in recent years as prominent politicians have called for a return of U.S. nuclear weapons or, failing that, an independent nuclear arsenal.¹¹⁸ Public opinion polling has supported this position.¹¹⁹ In addition, Seoul shows continued interest in plutonium reprocessing (avowedly for peaceful purposes) and in developing means of delivery. At present, it would be safe to conclude, however, that South Korea has no intention of developing nuclear weapons. Indeed, in Seoul there is even an underlying level of frustration at Washington's constant fears of the ROK's possible nuclearization. One former

¹¹⁸ Ralph Cossa, "U.S. Nuclear Weapons to South Korea?" 38 North, July 13, 2011.

¹¹⁹ Ibid.

South Korean policymaker described Washington's inability to get past South Korea's reprocessing program in the 1970s as a youthful indiscretion forever standing in the way of a happy marriage.¹²⁰

The reasons for the ROK's strong commitment to its nonnuclear status are many but center on the strength of the alliance with the United States and the superiority of U.S. capabilities over any of South Korea's potential nuclear threats.¹²¹ It is conceivable, however, that South Korea could reconsider its nonnuclear stance under a number of conditions, such as if the relationship with the United States were to weaken; if North Korean or Chinese capabilities were to improve, calling into question U.S. resolve to provide extended deterrence; or if Japan were to acquire nuclear weapons.¹²²

U.S. assurances are an important part of South Korea's nuclear abstinence. Washington's combined exercises with the ROK and deployments of aircraft to Guam and Okinawa provide assurance, as does the planned deployment of THAAD missile defense systems. Still, the U.S.-ROK relationship bears the hallmarks of the classic abandonment-entrapment dilemma, and South Korea fears that it might be abandoned. It also feels insecure in relation to Japan, which it believes will always be the United States' more capable and closer ally. Further, South Korea also feels that it could be entrapped into providing support for the United States in the event of a conflict between China and Japan.

Also important, however, are possible enhancements to North Korean capabilities. This threat looms large in South Korea given the instability of North Korea's leadership, the undeniably hostile relationship between the two states, and the intertwined conventional and nuclear threats the North poses. In particular, if North Korea were to weaponize its nuclear capability beyond the state of present-day ambiguities, the United States' current posture and strategy may appear insufficient. Washington may, therefore, need to take additional steps to reassure Seoul. Possibilities could include an increased number of U.S. troops on the peninsula, a return of U.S. tactical nuclear weapons, and closer collaboration and even joint military planning involving strategic assets.

Another possible mechanism by which South Korea could acquire nuclear weapons would be through a North Korean regime collapse scenario in which the ROK government inherits the entire peninsula, including the North's nuclear weapons. This possibility is on the minds of many policymakers in South Korea, but the strong plurality of opinion is that, under such a scenario, the government would denuclearize and maintain the alliance with the United States, including its military presence.¹²³ Such an arrangement would be attractive for a variety of reasons, including to guard the peninsula against a possible future rivalry with Japan.

However, the conviction with which many in Seoul dismiss any interest in nuclear weapons whatsoever and then the alacrity with which they vow to build them were Japan to go nuclear first are striking.¹²⁴ The reasoning is partly that South Korea would want to match Japan's capabilities, given their historical rivalry and also, indirectly, that Japanese nuclearization would signal a lack of either U.S. capability or will to prevent regional proliferation, providing South Korea with an incentive to follow Japan's lead. This evidence supports one of the nuclear multipolarity

¹²⁰ Author's interview in Seoul, August 2015.

¹²¹ These were recurring themes in my meetings in Seoul, August 2015.

¹²² Author's interviews in Seoul, August 2015.

¹²³ Ibid.

¹²⁴ Ibid.

hypotheses offered above: that proliferation becomes exponentially more likely as the number of nuclear-armed states in a region grows.

Yet perhaps the biggest near-term threat to South Korea's nonnuclear stance may be the recently completed Iranian nuclear deal. Since the beginning of the nuclear age, Washington has discouraged the spread of sensitive technologies for producing nuclear fuel (uranium enrichment and plutonium reprocessing) even to its closest allies due to the proliferation risk.¹²⁵ As mentioned above, the ROK developed a reprocessing program in the 1970s, but the United States forced it to shut down the program. Since that time, however, South Korea has been pushing for enrichment and reprocessing for avowedly peaceful purposes, but Washington has resisted. Although in a 123 agreement on civilian nuclear cooperation signed between Washington and Seoul in 2015 South Korea agreed not to pursue enrichment and reprocessing capabilities, the text stated that the issue could be reviewed in a few years.¹²⁶ It may be increasingly difficult, therefore, for the United States to maintain a policy that permits sensitive fuel-cycle technologies in Iran, an unfriendly state that has continually violated international commitments, and not recognize a similar right in a close, democratic ally. Indeed, workshop participants in Seoul asserted that if Iran has a right to enrichment and reprocessing, then South Korea should too.¹²⁷

Washington has a strong interest in preventing nuclear proliferation in South Korea and elsewhere, and will continue to discourage this, but the task will be more fraught in the wake of the agreement with Iran. To mitigate the challenge, the United States must work to ensure that the Iran nuclear deal does not set a precedent by granting other countries a perceived right to enrich uranium or reprocess plutonium. Among other steps, it must clearly and consistently repeat this message to international partners, including with reference to Article XI of the JCPOA's preamble, which states the following:

All provisions and measures contained in this JCPOA are only for the purpose of its implementation between E3/EU+3 and Iran and should not be considered as setting precedents for any other state or for fundamental principles of international law and the rights and obligations under the NPT and other relevant instruments, as well as for internationally recognized principles and practices.¹²⁸

Washington can privately warn its partners that countries in search of an Iran-like deal can expect the same treatment Iran received: a decade of international pressure, isolation, sanctions, and threats of military strikes. Washington must have a careful diplomatic approach to Seoul to explain its continued resistance to enrichment and reprocessing in South Korea despite the United States' reluctant willingness to allow such a capability in Iran.

Japan. It is also unlikely that Japan would go nuclear in the short term. Its culture, institutions, and relationship with the United States are bulwarks against future proliferation. Some in the Japanese government did consider acquiring nuclear weapons following the 2006 test by North Korea, but the option was seen as unrealistic in large part because Japan was uncomfortable with breaking its NPT commitments.¹²⁹ Even if South Korea were to acquire nuclear weapons, this

¹²⁵ Matthew Kroenig, "A Nuclear Turning Point," *Weekly Standard*, April 20, 2015.

¹²⁶ "U.S.-Republic of Korea (R.O.K.) Agreement for Peaceful Nuclear Cooperation," U.S. Department of State, Fact Sheet, June 16, 2015, <http://www.state.gov/t/isn/rls/fs/2015/243872.htm>.

¹²⁷ Author's interviews in Seoul, August 2015.

¹²⁸ Joint Comprehensive Plan of Action, July 14, 2015, <http://www.state.gov/documents/organization/245317.pdf>.

¹²⁹ Author's interview with a Japanese think tank expert, Washington, D.C., January 2016.

might not significantly change Japan's nonnuclear stance. Indeed, according to some in Tokyo, a nuclear-armed South Korea that is still aligned with, and restrained by, the United States could improve Japan's security by providing a counterbalance to North Korean nuclear forces.

According to my conversations with Japanese experts, there are two scenarios in which Japan might go nuclear, and both depend heavily on U.S. policy. The first would be if Japan felt that it could no longer depend on the United States to extend deterrence. The second would be if South Korea, or a future unified Korea, broke its alliance with the United States, pursued a more independent foreign policy, and built nuclear weapons. Yet even if Japan were to decide to go nuclear, it would face practical difficulties, such as the lack of an obvious nuclear testing site.¹³⁰

Iran. The other latent nuclear power, and therefore possible near-term threat to nuclear proliferation in Asia, is Iran.¹³¹ The JCPOA will almost certainly delay Iran's nuclear program, and many are hopeful that the agreement will permanently resolve the issue. It is also possible, however, that the deal will fail to prevent Iran from acquiring nuclear weapons. Because the JCPOA shelves the international community's main source of leverage through sanctions relief and allows Iran to retain a large nuclear infrastructure, the threat of Iranian nuclear proliferation remains.

Iran's acquisition of nuclear weapons could lead to further proliferation in the Middle East. Saudi Arabia and the United Arab Emirates, for example, have vowed to match whatever nuclear capabilities Iran acquires.¹³² Other states might be tempted to follow suit, including Turkey and Egypt. As President Obama has argued, a nuclear Iran "would make it more likely that other countries in the region would feel compelled to pursue their own nuclear programs, threatening a nuclear arms race in the most volatile region of the world."¹³³

As mentioned above, the precedent set in the JCPOA might also facilitate other moves toward advanced nuclear capabilities in the Middle East and around the world. To be sure, it is important not to overstate the inevitability of widespread nuclear weapons cascades if Iran were to violate the agreement and acquire nuclear weapons. There are many reasons that other countries in the Middle East might not want to build nuclear weapons even in such a scenario. A key factor is that the United States will continue to maintain a strict nonproliferation policy, and all the countries mentioned above have strong motives to remain in Washington's good graces.¹³⁴ Moreover, none of these states currently possess the requisite nuclear infrastructure to proliferate on short order. Nevertheless, over the course of time and with foreign assistance, any of the nations mentioned above could plausibly join the nuclear club. If such a movement toward nuclear breakout occurred in the Middle East, countries in East and Southeast Asia might feel compelled to respond in kind.

Other potential nuclear weapons states. Beyond the obvious candidates reviewed above, are there other states that might acquire the bomb over the coming decades? If so, which states are plausible candidates for future nuclear weapons proliferation?

After East Asia and the Middle East, the other subregion to watch is Southeast Asia. Malaysia and Indonesia are large nations that could marshal the necessary resources to build nuclear weapons given enough time and motivation.¹³⁵ Moreover, Malaysia has not yet signed the IAEA

¹³⁰ Author's interview with a Japanese think tank expert, Washington, D.C., January 2016.

¹³¹ Kroenig, *A Time to Attack*.

¹³² David E. Sanger, "Saudi Arabia Promises to Match Iran in Nuclear Capability," *New York Times*, May 13, 2015.

¹³³ "Read President Barack Obama's Statements on Iran Deal," *U.S. News*, July 14, 2015, <http://www.usnews.com/news/articles/2015/07/14/transcript-of-president-barack-obamas-statements-on-iran-deal>.

¹³⁴ Matthew Kroenig, "Force or Friendship? Explaining Great Power Nonproliferation Policy," *Security Studies* 23, no. 1 (2014): 1–32.

¹³⁵ These countries were mentioned as possible proliferators in several meetings, including during interviews in New Delhi in August 2015.

Additional Protocol, perhaps suggesting an intention to use its nuclear capabilities as a hedge. Myanmar has received North Korean missile (and possibly nuclear) technology in the past, which may indicate an underlying demand for a nuclear weapons production program.

Vietnam is enlarging its civilian nuclear program through a recently signed 123 agreement with the United States and, unlike the United Arab Emirates, has been unwilling to rule out the possibility of a future enrichment and reprocessing program. Some experts in Beijing seem particularly concerned about the possibility of a nuclear weapons program in Vietnam.¹³⁶ Indeed, Indian experts have even argued that India should provide sensitive nuclear technology to Vietnam and possibly other Chinese rivals in an attempt to impose the same types of problems on Beijing that Beijing has caused for New Delhi by assisting Pakistan's nuclear program over the years.¹³⁷

The U.S. intelligence community must continue to closely monitor potential proliferators. This should include states that are often cited as being at risk, such as Saudi Arabia, the United Arab Emirates, Japan, and South Korea. It should also include other countries that may seem less obvious but that over time could come to possess the capability and the will to go nuclear, such as Indonesia, Malaysia, and Vietnam. Indicators to watch for include sufficient industrial capacity and geopolitical rivalries, which are necessary conditions for nuclear proliferation. Further, intelligence analysts must pay careful attention to states interested in developing indigenous nuclear fuel-cycle capabilities and even to those that are unwilling to explicitly rule them out.

Washington should also consider diplomatic messaging to make clear to these countries the dire consequences of heading down the nuclear path. In the wake of the unprecedented international pressure brought to bear on the Iranian nuclear program (even if many believe Washington relieved this pressure too early), these warnings should carry at least some credibility.

Potential proliferators of nuclear material and technology. U.S. policy must also be attentive to developments in the international market for sensitive nuclear material and technology. The prospect of India transferring nuclear technology was mentioned above, but India is not of course the most likely future nuclear supplier in Asia. North Korea has been a profligate seller of nuclear and missile technology. Most recently, it helped Syria build a large plutonium-producing reactor before the site was bombed by Israel in fall 2007. Pyongyang remains a high risk for such transfers in the future. Pakistan exported do-it-yourself kits for making atomic bombs to Iran, Libya, and North Korea throughout the 1990s.¹³⁸ Although the Pakistani government has vowed to be a responsible nuclear power going forward and has taken concrete steps to improve nuclear security, the possibility of additional transfers cannot be ruled out.

Indeed, perhaps the most widely feared possible nuclear transaction concerns a Pakistani transfer of nuclear weapons to Saudi Arabia if Iran were to go nuclear. Riyadh helped finance Pakistan's nuclear weapons program in the 1970s with the expectation that Pakistan would funnel acquired nuclear technology back to Saudi Arabia. Many, therefore, argue that if Iran were to acquire nuclear weapons, it is a foregone conclusion that Pakistan would gift the bomb to Saudi Arabia.¹³⁹ Such a scenario, however, is highly unlikely. After all, although Pakistan and Saudi Arabia enjoy a close political relationship, Islamabad refused to support Riyadh in its ongoing

¹³⁶ Author's telephone interview with a Chinese nuclear expert, January 2016.

¹³⁷ Bharat Karnad, *Nuclear Weapons and Indian Security: The Realist Foundations of Strategy* (New Delhi: Macmillan India Limited, 2002).

¹³⁸ Kroenig, *Exporting the Bomb*.

¹³⁹ Mark Urban, "Saudi Nuclear Weapons 'On Order' from Pakistan," BBC, November 6, 2013; and Adam Withnall, "Iran Nuclear Warning: Saudi Arabia Could Get Nuclear Weapons 'at Any Time' from Allies Pakistan," *Independent*, November, 7, 2013.

war in Yemen, and transferring a nuclear stockpile is a much more significant commitment than contributing to an ongoing civil conflict. Moreover, no country has ever transferred a fully functioning nuclear weapon to another state; rather, states have regularly provided sensitive nuclear material and technology to other states.¹⁴⁰ If Pakistan were determined to help Saudi Arabia acquire nuclear weapons, a much more likely scenario is that it would transfer enrichment designs and component parts rather than complete nuclear warheads.

It is possible, however, that future nuclear suppliers will not come off the list of usual suspects. Indeed some have even suggested that Washington could become a future abettor of proliferation.¹⁴¹ Would the United States be willing to provide sensitive nuclear assistance, or at least turn a blind eye, if Vietnam, Taiwan, South Korea, or Japan were to attempt to build nuclear weapons in an effort to balance against China? This scenario is provocative but highly unlikely for the foreseeable future. Washington has flirted with the idea of allowing allies to go nuclear in the past. The Gilpatric Committee report in the 1960s, for example, considered encouraging China's rivals, such as India, to acquire nuclear weapons.¹⁴² But the United States has never followed through on such proposals. The United States, as a global superpower, has global interests and a strong rationale for preventing the spread of nuclear weapons anywhere, including to its closest allies.¹⁴³ Those incentives will not change anytime soon. Over the course of decades, however, if China's power continues to increase, U.S. power declines, and the United States comes to behave more as a regional power, then it is at least conceivable that Washington would be tempted to rely more on allied nuclear weapons and less on U.S. power-projection capabilities as a means to protect allies and contain the China threat.

Finally, Iran may also be a future nuclear supplier. At present, it possesses a large uranium-enrichment program and could provide enriched uranium, enrichment designs or component parts, or even turnkey enrichment plants to other states. While such a gambit would certainly be provocative, Tehran could simply employ the same cover it uses to justify its own enrichment program: the right to peaceful nuclear technology. If Iran has a right to uranium enrichment, then other NPT members presumably do as well, and Iran could potentially be the provider. Indeed, despite recommendations from outside experts to do so, the P5+1 did not include a provision in the JCPOA prohibiting Iran from transferring sensitive nuclear material or technology.¹⁴⁴

Washington should seek to deter the transfer of sensitive nuclear technology. It should publicly reaffirm its commitment, last articulated in the 2010 Nuclear Posture Review, to “hold fully accountable any state, terrorist group, or other non-state actor that supports or enables terrorist efforts to obtain or use weapons of mass destruction, whether by facilitating, financing, or providing expertise or safe haven for such effort.”¹⁴⁵ In doing so, the United States should go further and make clear that illicit nuclear technology transfers to states, as well as to terrorist groups, are prohibited. It should also privately warn states at risk of providing or receiving sensitive nuclear technology transfers of the intense international pressure that awaits those

¹⁴⁰ Kroenig, *Exporting the Bomb*.

¹⁴¹ This suggestion is from an NBR workshop in Washington, D.C., in December 2015.

¹⁴² Gavin, “Blasts from the Past,” 109.

¹⁴³ For further development of this argument, see Kroenig, “Force or Friendship?”

¹⁴⁴ Matthew Kroenig, “Mitigating the Security Risks Posed by a Near-Nuclear Iran,” Atlantic Council, Issue Brief, November 2014.

¹⁴⁵ For more on deterring terrorism, see Matthew Kroenig and Barry Pavel, “How to Deter Terrorism,” *Washington Quarterly* 35, no. 2 (2012): 21–36.

who engage in such transactions. To improve the credibility of these threats, the United States should continue to bolster the Proliferation Security Initiative as a means of interdicting the transfer of nuclear technology.

The United States will not be alone, however, when the future of proliferation in Asia is written; China will also be a significant coauthor. Historically, China has been a lax nonproliferator. Indeed, in the early Cold War, Mao was actually a proponent of proliferation, advocating the spread of nuclear weapons as a means of countering the hegemonic power of the United States and the Soviet Union.¹⁴⁶ Consistent with this worldview, China transferred sensitive nuclear technology as a matter of state policy to Iran, Pakistan, Algeria, and possibly other states.¹⁴⁷ By the end of the Cold War, however, China had greatly improved its nonproliferation credentials by signing the NPT, joining the Nuclear Suppliers Group, and implementing tougher domestic policies to control nuclear exports. It also has played a constructive role in negotiations with Iran and North Korea.

To be sure, the United States would like to see Chinese nonproliferation policy go further. In particular, Washington has often voiced a desire for Beijing to use its leverage over Pyongyang to force a nuclear rollback in North Korea. In this particular instance, the problem is that while Beijing prefers a nonnuclear North Korea, its preference for stability on the Korean Peninsula and a viable buffer state trumps its nonproliferation concerns. Beijing understands that getting tough with Kim Jong-un could undermine regional stability. Yet, as mentioned above, it is possible that closer U.S.-ROK-Japan ties and a military buildup to counter the threat from North Korea could cause Beijing to reconsider its past approach and get tougher with Pyongyang.

Another source of concern is China's continued civilian nuclear support to Pakistan and the potential for military diversion. Still, though often unwilling to go as far as Washington would like, China is likely to continue to play a mostly positive role on nonproliferation in Asia. This will be especially true if its power continues to grow, given that superpowers have the greatest interest in preserving a strict nonproliferation regime.¹⁴⁸ Indeed, one of the central reasons that many of the potential proliferators mentioned above, such as Vietnam, will be unlikely to proceed far down the path to the bomb is that they would face fierce resistance from both the United States and China.

Conclusion

This report has argued that nuclear multipolarity, although more diverse and more complex in many ways than nuclear bipolarity, may operate according to a coherent logic that can be understood through careful analysis. The report spelled out some of the most salient theoretical implications of nuclear multipolarity and traced its dynamics in contemporary Asia. Finally, it offered dozens of concrete policy recommendations that Washington can follow to secure U.S. interests. At the broadest level, these recommendations included the following:

- In a world with multiple nuclear adversaries, U.S. officials and strategists need to move away from thinking about a single nuclear strategy or posture and toward a model of separate strategies, postures, and capabilities for each potential adversary.

¹⁴⁶ Kroenig, *Exporting the Bomb*.

¹⁴⁷ *Ibid.*

¹⁴⁸ Kroenig, "Force or Friendship."

- Washington needs to understand that changes to its nuclear posture and strategy can have widespread effects throughout the system. It must also consider more creative arms control agreements that encourage restraint between states in different positions in the international system, lock in asymmetric capabilities, and place limits on unlike capabilities.
- The United States must devote more attention to the real risk that deterrence might fail and consider possible response scenarios by increasing dialogue on this subject with both allies and third parties.
- To effectively extend deterrence in East Asia and assure regional allies, the United States must continue to maintain a clear strategic advantage over potential regional adversaries.
- To contain the dangers unleashed by nuclear multipolarity, Washington must hold the line on future proliferation in the region and, where possible, take proactive steps to roll back existing nuclear capabilities.

To be sure, the Asia-Pacific may still be the world's most complex nuclear environment in the 21st century. The region's existing nuclear powers are continuing to modernize and expand their capabilities, and there is a serious risk that several other states may seek to nuclearize in the coming years. Intensifying dyadic and triadic rivalries, the possible spread of nuclear capabilities, and the potential for further reductions to the United States' nuclear arsenal will all profoundly challenge U.S. policy, threaten stability throughout the region, and complicate the efforts of the international nonproliferation regime.

Yet these challenges are not insurmountable. In the past, the United States has managed to understand, adapt to, and thrive in equally challenging security environments. With the insights from this study in hand and the future work I hope to inspire, addressing the challenges of a multipolar nuclear Asia should be no different.

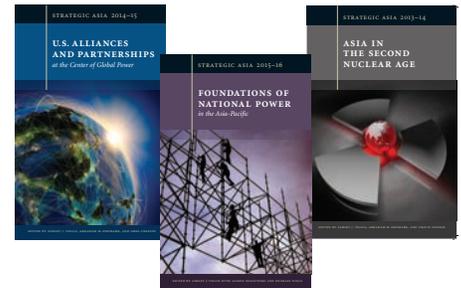


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JASON LEE/Stringer/Getty Images

Pacific Trilateralism

The United States has a strong interest in turning its robust alliances with Japan and the Republic of Korea (ROK) into a trilateral relationship marked by cooperation, good will, and mutual understanding. The U.S.-Japan-ROK Pacific Trilateralism project is a three-stage initiative that identifies ongoing and future security challenges affecting the United States, Japan, and the ROK; proposes policy recommendations to strengthen trilateral cooperation; and promotes increased discussion of the trilateral relationship within the U.S., Japanese, and ROK policymaking communities.



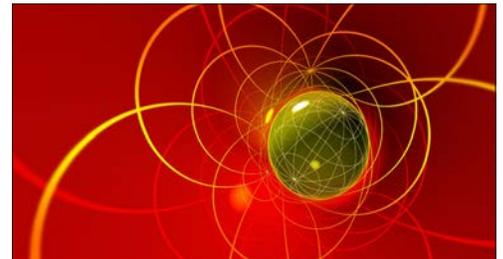
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Space, Cyberspace, and Strategic Stability in the Asia-Pacific

The Asia-Pacific’s increasing geopolitical importance and military significance is well recognized. Less understood, however, is how emerging, novel capabilities in space and cyberspace have the potential to dramatically influence conditions and nuclear deterrence dynamics in Asia in unexpected ways. As regional actors grow increasingly capable in space and cyberspace, they will profoundly challenge U.S. defense policy and potentially threaten strategic stability in the Asia-Pacific. By gathering key experts and officials from across the region to explore these issues, this project will deepen understanding of the complex factors influencing strategic stability.



Approaching Critical Mass

Is the world approaching critical mass, a point at which the number and size of nuclear arsenals and the dangers associated with them will grow and pose greater challenges? As part of this initiative, leading scholars examine challenges unique to the Asia-Pacific’s current nuclear environment. In particular, the initiative focuses on how overlapping nuclear hierarchies and the modernization of capabilities, at both the nuclear and conventional levels, shape deterrence and assurance calculations between the United States and its regional allies and partners across a range of plausible contingencies. This project will deepen understanding of the complex dynamics influencing the Asia-Pacific’s current and future nuclear environment and their implications for U.S. nuclear strategy and policy.



For more information on these initiatives, please contact the Political and Security Affairs group at psa@nbr.org.



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