

Japan's Nuclear Hedge: Beyond "Allergy" and Breakout

Richard J. Samuels and James L. Schoff

RICHARD J. SAMUELS is Ford International Professor of Political Science and Director of the Center for International Studies at the Massachusetts Institute of Technology. He can be reached at <samuels@mit.edu>.

JAMES L. SCHOFF is a Senior Associate in the Asia Program at the Carnegie Endowment for International Peace. He can be reached at <jschoff@ceip.org>.

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EXECUTIVE SUMMARY

This chapter examines the future of Japan's hedged dependence on U.S. extended deterrence and encourages more imaginative thinking about potential outcomes and strategic implications as the "second nuclear age" unfolds.

Main Argument:

- With the U.S. nuclear umbrella shrinking and nuclear threats in Asia becoming greater and more complex, analysts cannot dismiss a nuclear-armed Japan as a purely academic exercise.
- While we do not expect a Japanese nuclear breakout in the near term, Washington's traditional reassurances—massive numbers of weapons deployed in theater and a robust regional presence—have given way to a less convincing reliance on specific weapon systems amid a diminishing conventional military advantage.
- Enhanced bilateral dialogue has been used to strengthen the alliance, but Japan's neighborhood is more dangerous than ever, and the many domestic constraints on Japanese nuclear breakout—cultural, political, and institutional—could become less restrictive than before.

Policy Implications:

- A U.S. decision to sustain extended deterrence will require significantly more resources and attention than heretofore assigned.
- A more integrated, alliance-based approach to deterrence might therefore become attractive.
- Alternatives to Japan's long-practiced nuclear hedge may come to have appeal in Tokyo or Washington.
- Coordinated regional action to limit North Korea's nuclear development remains critical.

Japanese strategists have long been ambivalent about nuclear weapons. On the one hand, memories of horrific nuclear attacks on Hiroshima and Nagasaki have sustained anti-nuclear sentiment and helped justify national policies championing nonproliferation and forgoing an indigenous nuclear arsenal. This “nuclear allergy” has been diagnosed as a genetic condition, and associated institutional and diplomatic constraints on nuclear breakout have been invoked to predict that Japan will find it virtually impossible to reverse course on nuclear weapons.

Japan’s non-nuclear bona fides are well established. Until its revision in 2012, Article 2 of Japan’s Atomic Energy Basic Law (1955) stated clearly that research, development, and utilization of atomic energy is limited to peaceful purposes.¹ Japan joined the International Atomic Energy Agency (IAEA) in 1957 and has generously supported the agency’s work. After considerable debate and delay—and the receipt from the United States of much greater latitude for nuclear fuel handling and reprocessing—Japan ratified the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1976 and supported the treaty’s indefinite extension in 1995. Japan also ratified the Comprehensive Nuclear Test Ban Treaty in 1997 and was the first to sign the IAEA’s Additional Protocol in 1998, allowing a stricter regimen for IAEA inspections of Japanese nuclear facilities.

Consequently, it was surprising to some in 2013 when Japan declined to join 74 other nations and sign a statement in advance of the next NPT review stating that nuclear weapons are inhumane and should not be used under any circumstance.² This illuminates the other, more realistic side of Japan’s approach to nuclear weapons. The Japanese government does indeed believe that some circumstances might warrant the acquisition and use of nuclear weapons, and the fact that Japan’s ability to act on this belief rests solely in U.S. hands is unnerving for certain politicians and bureaucrats in Tokyo.

Amid periodic reviews of the nuclear option in Japan, national policy has consistently depended on the “full range” of U.S. military might to deter nuclear attacks. This policy has been accompanied by frequent reminders to nuclear-armed rivals, as well as to Washington, that preemptive strikes and the use of nuclear weapons can be valid forms of self-defense. Japan has

¹ The 2012 amendment to the law adds “national security” as one of several reasons why nuclear safety should be guaranteed. Although the government and individual lawmakers claim this addition does not conflict with the “peaceful use” of nuclear energy, the revised law is arguably less clear on this point. See, for example, “‘National Security’ Amendment to Nuclear Law Raises Fears of Military Use,” *Asahi Shimbun*, June 21, 2012.

² *Japan Times*, April 26, 2013.

made it clear since the 1950s that it reserves the right (and will maintain the capacity) to develop a nuclear arsenal of its own. This strategy—“lying between nuclear pursuit and nuclear rollback”—is the essence of “the most salient example of nuclear hedging” among global powers.³ One Japanese analyst has framed Japan’s position on nuclear weapons as a balancing act between nuclear approval and nuclear denial.⁴

Over the past four decades, Japan has maintained viable—and unconcealed—options for the relatively rapid acquisition of nuclear weapons and has justified its decision not to pursue nuclear breakout in many ways. But each time the regional security environment has shifted—such as after China’s first nuclear test in 1964, the end of the Cold War, North Korea’s nuclear breakout in the 2000s, or the 2010 U.S.-Russia New Strategic Arms Reduction Treaty (START) agreement limiting warheads and launchers—Tokyo has re-examined its policy before signaling for (and accepting) U.S. reassurance on extended deterrence.

Early on, U.S. reassurances were a straightforward matter. In the 1960s, U.S. nuclear weapons were dispersed widely around the world. In addition to thousands of nuclear-tipped missiles back home and patrolling the seas, the United States kept nearly 3,000 nuclear weapons “on shore” in the Asia-Pacific, including some 1,200 in Okinawa, where U.S. strategic bombers were based.⁵ This nuclear deterrent cost Japan relatively little: hosting U.S. military bases and providing for its own basic defense. The combination of Japan’s unwillingness to contribute fully to its own defense or to the defense of its U.S. ally and Japanese expressions of concern about the reliability of the U.S. nuclear umbrella accentuated Japan’s cheap ride on national security.⁶

³ Ariel E. Levite, “Never Say Never Again: Nuclear Reversal Revisited,” *International Security* 27, no. 3 (2002/03): 59–88 introduces and develops this concept (these quotes are from pages 59 and 71). Mike M. Mochizuki, “Japan Tests the Nuclear Taboo,” *Nonproliferation Review* 14, no. 2 (2007): 306 calls it “pragmatic pacifism” and argues that “it made sense [for Japan] to retain at least a latent capability to exercise the nuclear option” (these quotes are from page 311). Llewelyn Hughes, “Why Japan Will Not Go Nuclear (Yet): International and Domestic Constraints on the Nuclearization of Japan,” *International Security* 31, no. 4 (2007): 67–96 rejects the term “nuclear hedging,” but acknowledges that “the door to independent nuclearization [by Japan] remains ajar” (p.69) and that “formal barriers to nuclearization are surmountable” (p.91).

⁴ Yuri Kase, “The Costs and Benefits of Japan’s Nuclearization: An Insight into the 1968/70 *Internal Report*,” *Nonproliferation Review* 8, no. 2 (2001): 55.

⁵ Robert S. Norris, William M. Arkin, and William Burr, “Where They Were,” *Bulletin of Atomic Scientists* (1999): 30. Okinawa was under U.S. administrative control at the time.

⁶ On U.S. concerns about a Japanese nuclear breakout in the 1960s, see Francis J. Gavin, *Nuclear Statecraft: History and Strategy in America’s Atomic Age* (Ithaca: Cornell University Press, 2012). For an analysis of Japan’s cheap ride, see Richard J. Samuels, *Securing Japan: Tokyo’s Grand Strategy and the Future of East Asia*, (Ithaca: Cornell University Press, 2007). On the connection between extended deterrence and the “irony” of the

Reassuring Japan is more challenging today, however, and how Tokyo sorts through its strategic choices is more pertinent than ever. Japan faces new nuclear threats and relative shifts in the regional balance of power. Although more accurate and more potent, the U.S. nuclear arsenal is now smaller and less visible, and the “second nuclear age” is ushering in a multipolar and less predictable nuclear landscape.⁷ The United States withdrew the last of its land-based nuclear weapons from Asia in 1991 and reduced its overall nuclear stockpile by about 75% since then, and further reductions are being considered.⁸ More recently, U.S. reassurance has focused on the capability and flexibility of specific systems, but this has been undercut by Washington’s retirement of some that were earlier touted as being mission-critical.⁹ Bilateral dialogue and closer policy coordination have become more important aspects of reassurance and deterrence for the alliance, but the degree to which this can mitigate rising Japanese concerns about North Korea and China is uncertain.

Japanese public opinion remains staunchly anti-nuclear, and Japan would likely be the last country in Northeast Asia to opt for nuclear arms. But while there are many domestic and international constraints on nuclear breakout, there are also signs of a more sophisticated debate in Japan about these issues as the demand for reassurance has escalated. The key questions are how Japan perceives its options, whether and how its calculus could change, and what this would mean for the region and the U.S.-Japan alliance.

To address these questions, this chapter examines the origins and current state of Japan’s nuclear hedge and considers how deterrence and reassurance dynamics are evolving in the region. It then explores the prospects and implications for a nuclear breakout by Japan, as well as alternative strategic paths that Japan and the alliance can take. Although Japan’s nuclear hedging strategy is likely to continue in the near future, U.S. policymakers (and those throughout the

imbalanced commitments to the alliance, see Barry R. Posen, *U.S. Grand Strategy: The Case for Restraint* (Ithaca: Cornell University Press, forthcoming).

⁷ Keith B. Payne, *Deterrence in the Second Nuclear Age* (Lexington: University Press of Kentucky, 1996).

⁸ “Fact Sheet: Increasing Transparency in the U.S. Nuclear Weapons Stockpile,” U.S. Department of Defense, May 3, 2010, http://www.defense.gov/npr/docs/10-05-03_fact_sheet_us_nuclear_transparency_final_w_date.pdf; and Scott Wilson, “Obama, in Berlin, Calls for U.S., Russia to Cut Nuclear Warheads,” *Washington Post*, June 19, 2013.

⁹ For example, the retirement of nuclear-tipped Tomahawk land attack cruise missiles (TLAM/N) was announced in 2010. Wade Huntley, “Speed Bump on the Road to Global Zero: Nuclear Reductions and Extended Deterrence in East Asia,” *The Nonproliferation Review* 20, No. 2 (Summer 2013).11–12.

region) should not be sanguine about this strategy continuing indefinitely. Japan's choices will be determined ultimately by how well potential threats can be managed and by the strength of the U.S. commitment to extended deterrence.

Japan's Current Posture

The evolution of Japan's nuclear posture owes as much to political circumstances as to a realistic assessment of U.S. capabilities and commitment. Japanese leaders have understood that pursuit of nuclear weapons is politically, diplomatically, and economically impracticable, but they also recognize that an independent nuclear deterrent is unnecessary as long as U.S. guarantees remain credible to potential adversaries. As a result, Japan decided early on to deny itself nuclear weapons and instead hedge against changing circumstances.

Japan's nuclear hedge has two elements. The first involves confirming (and serially reconfirming) the U.S. commitment and capability to use nuclear weapons in defense of Japan. In 1965, for example, Prime Minister Eisaku Sato asked Defense Secretary Robert McNamara to pledge to deploy nuclear weapons against China in the event of war. McNamara and President Lyndon Johnson gave that assurance. Similar conversations have followed at various levels of government and the military, always backed by reassuring public statements from Washington. In addition, for decades the Japanese government turned a blind eye to the possible introduction of U.S. ship- and aircraft-based nuclear weapons during port and base visits in Japan, despite its public pledge to forbid such practices.¹⁰ Beginning in 1976, each of Japan's National Defense Program Outlines has stated that Japan will depend on U.S. extended deterrence.

The second element involves Japan's maintenance of the foundation for its own nuclear weapons program, should the country ever make that choice. Former prime minister Nobusuke Kishi believed that nuclear weapons were absolutely necessary if Japan were to have influence in world affairs, and he instructed his Cabinet Legislation Bureau in 1957 to formally pronounce that Japan's constitution allowed the country to possess nuclear weapons for self-defense.¹¹ An original member of Japan's Atomic Energy Commission recalled how "we were pressured

¹⁰ *New York Times*, March 9, 2010 and Norris, Arkin, and Burr, "Where They Were," 31.

¹¹ Samuels, *Securing Japan*, 176. Kishi and then foreign minister Hisanori Yamada reportedly told MacArthur in 1958 that their government was exploring the nuclear weapons option. See *Kyodo News*, March 17, 2013.

repeatedly to do basic research on how to make an atomic bomb.”¹² Leading politicians have reasserted the constitutionality of nuclear weapons throughout the years, including current and former prime ministers Shinzo Abe and Taro Aso.¹³ In addition, an important policy study by Japan’s Ministry of Foreign Affairs (MOFA) noted in 1969 that “regardless of joining the NPT or not, we will keep the economic and technical potential for the production of nuclear weapons, while seeing to it that Japan will not be interfered with in this regard.”¹⁴

Toward this latter end, and despite considerable opposition from within Japan and from the international community, Japan has never wavered from its early commitment to completing the nuclear fuel cycle. This commitment entails the maintenance of vigorous enrichment and reprocessing capabilities, the stockpiling of separated plutonium, and the development of a fast breeder reactor (FBR) that other nations—most prominently the United States—have long since abandoned as too costly and dangerous. In fact, Japan has the largest nuclear-power program of any non-weapons state and is the only one with full-spectrum fuel cycle capabilities.¹⁵ Of course, Japan’s nuclear-power industry suffered a major blow after the 2011 tsunami-induced meltdowns at plants in Fukushima, and there are many legal, political, and technical restrictions that would make a Japanese nuclear breakout extremely difficult. Nonetheless, it has always been important for Japan to keep that option open.

Opening the Nuclear Umbrella

¹² Jacques E.C. Hymans, “Veto Players, Nuclear Energy, and Nonproliferation: Domestic Institutional Barriers to a Japanese Bomb,” *International Security* 36, no. 2 (2011): 167.

¹³ Abe made his comment in a speech at Waseda University in May 2002 when he was deputy chief cabinet secretary, and Aso made the comment in November 2006 when he was foreign minister. The first Abe administration officially clarified this stance in a 2006 statement before the Diet, saying that “even with nuclear weapons, we’ve understood that possessing them would not necessarily violate the constitution as long as it is kept within [the limits of minimum capabilities necessary for self-defense].” See, for example, “Japan Can Hold Nuclear Arms for Self-Defense: Govt.,” Reuters, November 14, 2006.

¹⁴ *Mainichi Daily News*, August 2, 1994 and Taka Daitoku, “The Kishi Doctrine and the Construction of a Virtual Nuclear State in Postwar Japan” (paper presented to the Annual Meeting of the American Historical Association, New Orleans, January 5, 2013).

¹⁵ Nobumasa Akiyama and Kenta Horio, “Can Japan Remain Committed to Nonproliferation?” *Washington Quarterly* 36, no. 2 (2013): 152. For more on the domestic disputes about Japan’s “nuclear back end,” see Richard J. Samuels, *3.11: Disaster and Change in Japan* (Ithaca: Cornell University Press, 2013).

Nestling under the U.S. “nuclear umbrella” was never uncontroversial. Left-wing politicians argued in the mid-1960s that this policy was part of Washington’s plan for global domination, and much of the public feared becoming entangled in a nuclear war between superpowers.¹⁶ Some on the political right, seeing reliance on U.S. nuclear weapons as a symbol of Japan’s second-tier status, worried about national prestige and pushed for a more overt hedge.¹⁷ Conservative political leaders—including Shigeru Yoshida and Hayato Ikeda in the pragmatic wing of the Liberal Democratic Party (LDP) and revisionists such as Ichiro Hatoyama and Yasuhiro Nakasone—repeatedly called in private for an indigenous nuclear capability.¹⁸

Inside the bureaucracy, opinions were mixed. MOFA warned in 1959 that Japan should not rule out the possibility of developing nuclear weapons, lest the country lose flexibility in pursuing national security.¹⁹ Later, in 1966, a vice-minister of foreign affairs stated publicly that Japan was not protected under the U.S. nuclear umbrella. MOFA immediately issued a “unified viewpoint,” introducing one of many awkward locutions the Japanese government uses to describe its national security strategy: it was not accurate to say that Japan was not covered by the nuclear umbrella.²⁰

Sato, initially a supporter of Japanese nuclear armament, reversed course when confronted with Washington’s strong nonproliferation policy and his own government’s internal studies concluding that reliance on extended deterrence was the best way forward.²¹ None of the

¹⁶ [Nikkan Jōyaku nado Tokubetsu Iinkai: Nipponkoku to Dai Kan Minkoku to no aida no Kihon Kankei ni Kansuru Jōyaku nado no Teiketsu ni tsuite Shōnin wo Motomeru no Ken][Proceedings of the Special Committee Considering the Proposed Japan-Korea Treaty], *House of Councillors, The National Diet of Japan*, December 3, 1965.

¹⁷ Daitoku, “Kishi Doctrine,” 2.

¹⁸ See Ayako Kusunoki, “The Sato Cabinet and the Making of Japan’s Non-Nuclear Policy,” *Journal of American-East Asian Relations* 15, Nos. 1-2 (Spring-Winter, 2008):28–29; and Daitoku, “Kishi Doctrine,” 3.

¹⁹ *Kyodo News*, December 22, 2008.

²⁰ Nobumasa Akiyama, “The Socio-Political Roots of Japan’s Non-Nuclear Posture,” in Benjamin Self and Jeffrey Thompson, eds. *Japan’s Nuclear Option: Security, Politics and Policy in the 21st Century* (Washington, D.C.: The Henry L. Stimson Center), 86. For similar rhetorical gymnastics on defense policy, see Samuels, *Securing Japan*.

²¹ Some suggest that it is also possible that rather than seriously advocating for nuclear weapons, Sato was instead taking that position in order to extract security guarantees from Washington. See Kusunoki, “Sato Cabinet,” 31; and Michael J. Green and Katsuhisa Furukawa, “Japan: New Nuclear Realism,” in *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, ed.: 357. Others are less certain. See Kurt M. Campbell and Tsuyoshi Sunohara, “Japan: Thinking the Unthinkable,” in *The Nuclear Tipping Point: Why States Reconsider Their*

conceivable alternatives—i.e., domestic nuclear weapons production, nuclear sharing with the United States, or overtly denying U.S. nuclear protection—was considered viable at that time by most Japanese strategists. Understanding this, and provided with high-level U.S. assurances, in 1967 Sato announced three non-nuclear principles of non-possession, non-manufacture, and non-introduction. A year later he articulated the “four pillars” policy, and in 1970 the government signed the NPT, leaving no doubt about Japan’s reliance on the U.S. nuclear umbrella.²²

One of the four pillars is the three non-nuclear principles, and this pillar is accompanied by three more: (1) promoting nuclear power for peaceful purposes, (2) promoting global nuclear disarmament, and (3) relying on the U.S. nuclear deterrent for protection from the international nuclear threat. The four pillars policy officially opened the nuclear umbrella, and even if it is perceived as leaky by some, this umbrella has remained open ever since. Although he privately called the three principles “nonsense,” Sato was awarded the Nobel Peace Prize in 1974.

Japan’s “Basic Defense” Rationale and Its Latent Nuclear Deterrent

Around this time in the early 1970s, Japanese defense officials moved away from ambitious plans for a robust Self-Defense Force and adjusted to the political and economic realities of the time. A bellwether document penned in 1971 by Takuya Kubo, the director of the Defense Bureau of the Japan Defense Agency (JDA), outlined a new direction toward basic defense. Kubo saw “no probable threats” to Japan and rationalized a small defense establishment and close alliance with the United States.²³ Kubo agreed with other leading strategic thinkers that nuclear weapons had limited military utility for Japan. The country was too dense and too small and would always lose more than it gained in a nuclear exchange. Moreover, adversaries were unlikely to believe that Japan would actually use its nuclear weapons—a lack of credibility that,

Nuclear Choices, ed. Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss (Washington, D.C.: Brookings Institution Press, 2004), 218–53; and Etel Solingen, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (Princeton: Princeton University Press, 2007), 73.

²² For more on the Sato turnaround, the three principles, and the four pillars, see Green and Furukawa, “Japan: New Nuclear Realism;” Kusunoki, “Sato Cabinet;” and Solingen, *Nuclear Logics*.

²³ Kubo’s memo was titled “A Framework to Consider the Arrangement of Japan’s Defense Capabilities,” World and Japan database, University of Tokyo Institute of Oriental Culture, February 20, 1971, <http://www.ioc.u-tokyo.ac.jp/~worldjpn/documents/texts/JPSC/19710220.O1J.html>.

according to Kubo, undermined their deterrent effect. “There is no choice but to rely on U.S. extended deterrence,” he concluded.²⁴

Japan’s basic defense concept became the centerpiece of the country’s first National Defense Program Outline in 1976 and continued to shape Japan’s defense strategy until it was superseded in 2010 by a “dynamic defense” concept.²⁵ Although for Kubo nuclear breakout was off the table, his memo clearly articulated Japan’s nuclear hedge, positioning the hedge more as a signal to Japan’s U.S. ally than to its adversaries: “[Japan should] establish a structure to develop considerable nuclear armament capability at any time... [so] the United States will get worried about unstable international relations due to nuclear proliferation and will desire to maintain the U.S.-Japan security regime including extended deterrence.”²⁶

The most prominent and credible element of Japan’s latent weapons capability is its sophisticated nuclear-energy program and, in particular, its decades-long national commitment to completing the nuclear fuel cycle in the name of energy independence. This goal justifies reprocessing spent fuel and accumulating separated plutonium for use in a “pluthermal” mixed-oxide (MOX) product. Extracting more energy from spent fuel by reusing it and operating FBRs that produce more fissile material than they consume can release Japan from its dependence on imported fuels. In theory, this energy strategy sounds sensible. The problem, however, is that the economics and engineering behind this MOX/FBR strategy are not working, and the plutonium continues to accumulate.²⁷ Japan’s stocks of plutonium now vastly outweigh the amount needed for any plausible nuclear power or nuclear weapons program. One leading American expert suggests that today there is “enough plutonium in Japan to make 1,000 nuclear weapons.”²⁸

²⁴ Kubo, “A Framework to Consider the Arrangement of Japan’s Defense Capabilities.”

²⁵ See “Summary of National Defense Program Guidelines for FY 2011 and Beyond,” Japan Cabinet Secretariat, 3, http://www.kantei.go.jp/foreign/policy/decisions/2010/___icsFiles/afieldfile/2012/01/27/summary_ndpg_e.pdf.

²⁶ Kubo, “A Framework to Consider the Arrangement of Japan’s Defense Capabilities.”

²⁷ See “The Current Situation of Plutonium Management in Japan,” Atomic Energy Commission of Japan, September 20, 2011, <http://www.aec.go.jp/jicst/NC/iinkai/teirei/siryu2011/siryu36/110920e.pdf>. At the end of 2011, Japan had 44.3 metric tons of separated reactor-grade plutonium. Of this, 9.3 metric tons are in Japan. The remaining 35 metric tons are in reprocessing plants in France (La Hague) and the United Kingdom (Sellafield). See “Communication Received from Japan Concerning its Policies Regarding the Management of Plutonium,” International Atomic Energy Agency (IAEA), October 3, 2012, <http://www.iaea.org/Publications/Documents/Infcircs/2012/infcirc549a1-15.pdf>.

²⁸ Frank von Hippel, “Should the U.S. Encourage South Korea and Japan to Make Plutonium-Based Nuclear Fuels?” (presentation at a Nonproliferation Policy Education Center, Washington, D.C., April 4, 2013). Ichiro Ozawa, a

Japan's nuclear hedge requires that the connection between nuclear power and nuclear arms not be hidden. When the Japanese nuclear-power industry faced elimination after the March 2011 catastrophe in northeastern Japan, senior leaders—including Satoshi Morimoto, the incumbent defense minister in 2012—argued that nuclear power was the basis for a “latent deterrent” and must be preserved. Likewise, former defense minister Shigeru Ishiba said that it was “important to maintain our commercial reactors because it would allow us to produce a nuclear warhead in a short amount of time.”²⁹

A second element of Japan's nuclear hedge is the expertise in potential weapon-delivery platforms that the country has gained through its space program.³⁰ Although its primary space-launch vehicle, the H-II series is poorly suited as a missile—given its liquid-fuel composition—Japan has consistently pursued solid-fuel rocket technology, starting with the Kappa in 1956 and eventually leading to the 1.8-ton payload M-V in 1989.³¹ The decision to discontinue the M-V in 2006 over cost concerns was opposed by some members of the Diet who believed the government should maintain such technology for its potential military utility.³² The M-V's successor, the Epsilon-1, flew its first test in 2013 **[check date later, should be in August]**.

Although Japanese rockets are not designed to re-enter the atmosphere or hit a specific target, the Japan Aerospace Exploration Agency has been experimenting with re-entry technology since at least 1994 and accomplished its first controlled re-entry for the upper stage

senior Japanese politician, has suggested that the number of potential warheads is closer to three or four times von Hippel's estimate. A decade ago, Jeffrey W. Thompson and Benjamin L. Self estimated that number to be in the hundreds in *Japan's Nuclear Option*, 163.

²⁹ Samuels, *3.11: Disaster and Change*, 124. For their part, American officials rushed to support the beleaguered Japanese nuclear power program after the disasters of March 11, 2011. Some report that this was due to U.S. concerns about the effect of a shutdown on excessive plutonium stockpiles, but others suggest that U.S. dependence on Japanese nuclear technology requires a robust nuclear-power industry. Author's interview with a former senior Japanese intelligence official, Tokyo, March 26, 2013.

³⁰ For an optimistic assessment of the military capabilities of Japan's space program, see Saadia M. Pekkanen and Paul Kallender-Umezu, *In Defense of Japan: From the Market to the Military in Space Policy* (Stanford: Stanford University Press, 2010); and for an opposing view, see Thompson and Self, “Nuclear Energy.”

³¹ Katsuhisa Furukawa, “Making Sense of Japan's Nuclear Policy: Arms Control, Extended Deterrence, and the Nuclear Option,” in Self and Thompson, *Japan's Nuclear Option*, 114.

³² Author's interview with a Japanese defense analyst, February 8, 2008.

of the H-IIB rocket in 2011.³³ Japan has had access to U.S. ballistic missile–defense technologies at both the upper (mid-course) and lower (terminal phase) tiers, and has been developing space technologies to assist with precision targeting, including high-precision time control and orbital estimation.³⁴

Studies of Japan’s nuclear options do not agree on how quickly the country could establish a robust, survivable, independent nuclear deterrent—a much more challenging task than building a few bombs. Some conclude that Japan is technically capable of developing a nuclear weapon within a year (some studies even suggest six months or less), whereas others argue that it would take at least a decade.³⁵ It is widely acknowledged that Japan lacks expertise on bomb and warhead design, reliable delivery vehicles, intelligence and counterintelligence capabilities designed to protect and hide assets from a potential first strike, a comprehensive command-and-control system, and infrastructure to safely test weapons.³⁶ These are not trivial constraints that could be overcome immediately. For example, if Japan wanted a sea-based deterrent—an attractive option given its greater survivability—it would have to develop ballistic-missile submarines and possibly nuclear-powered ones. Likewise, the use of reactor-grade plutonium, though not impossible (and not likely Japan’s first choice), would create new difficulties and take additional time.

³³ See “Successful Execution of Controlled Re-entry of Launch Vehicle Upper Stage,” *JAXA Today*, August 2012, 22–23.

³⁴ Pekkanen and Kallender-Umezū, *In Defense of Japan*, 36–37; and Narushige Michishita, “Japan’s Response to Nuclear North Korea,” *Joint U.S.-Korea Academic Studies* 23 (2012): 99–112.

³⁵ These comparisons are imperfect. Some refer to building a single bomb, others to building a robust, survivable arsenal. For a range of estimates, see Federation of American Scientists, “Japan’s Nuclear Weapons Program,” April 16, 2000, <http://www.fas.org/nuke/guide/japan/nuke>; and Mataka Kamiya, “Nuclear Japan: Oxymoron or Coming Soon?” *Washington Quarterly* 26, no. 1 (2002–03): 63–75; Toshi Yoshihara and James R. Holms, eds., *Strategy in the Second Nuclear Age: Power, Ambition, and the Ultimate Weapon* (Washington, D.C.: Georgetown University Press, 2012); Kusunoki, “The Sato Cabinet”; and National Security Archive, 2005. The likelihood of further nuclear proliferation (National Intelligence Estimate No. 4-66). January 20. National Security Archive electronic briefing book no. 155, National intelligence estimates of the nuclear proliferation problem: The first ten years, 1957-1967. Posted June 1. <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB155/prolif-12.pdf>. A secret government-requested study in 2006 estimated that it would take “at least 3 to 5 years until Japan can go into trial production of a miniaturized warhead.” See *Sankei Shimbun*, December 25, 2006.

³⁶ See <http://www.lewis.armscontrolwonk.com/archive/1339/japans-nuclear-status>; and Hajime Izumi and Katsuhisa Furukawa, “Not Going Nuclear: Japan’s Response to North Korea’s Nuclear Test,” *Arms Control Today* 37, no. 5 (2007): http://www.armscontrol.org/act/2007_06/coverstory.

There is, of course, an alternative and more likely route—using highly enriched uranium (HEU). The controversial Rokkasho nuclear enrichment plant has sophisticated centrifuges that provide Japan with a uranium-enrichment capability. Another, less likely, path to producing weapons-grade HEU could be a laser isotope-separation process, which Japan dabbled in for years before inefficiencies led to a cutback on implementation plans in 2001. Although laser enrichment is not commercially attractive, the know-how and equipment remain in Japan, and as we learned in the case of South Korea in 2004, experiments to produce HEU in small doses can be difficult for IAEA inspectors to detect.³⁷

There are other skills in which Japanese researchers excel that are often neglected in discussions of Japan's latent deterrent. These include high-speed framing radiography, heavy-metal shock physics, radiation hydrodynamics, and explosive shaping. Knowledge in these areas and others that are basic for development of a thermonuclear device is scattered throughout Japan's industrial and research communities. It is not uncommon for Japanese research scientists to attend and present papers at international conferences on shock compression or high-speed photonics also attended by nuclear weapons scientists from the United States, Russia, and China.³⁸ These research activities have practical application in a wide range of non-military areas and are not necessarily telltale signs of a secret nuclear weapons research program. Indeed, while some policymakers in Tokyo would like to foster closer ties between Japan's scientists and defense planners, a wide gulf remains between the two communities.³⁹ It also appears that Japan lacks deep experience with other activities relevant to a weapons program such as plutonium metallurgy or beryllium machining, which could be helpful depending on what path Japan chose.

Still, Japan clearly has mature capabilities in certain areas, capabilities that are as relevant to its nuclear hedge as the country's plutonium stockpile. It is also evident that national policy recognizes the value of these programs in preventing both the United States and potential

³⁷ In 2004, South Korean officials admitted to the IAEA that government scientists conducted HEU experiments in 2000 (without authorization) using laser isotope separation, successfully producing small amounts of nearly weapons-grade uranium.

³⁸ For a more detailed assessment of Japan's technical and scientific capacity to produce nuclear weapons, see James L. Schoff, "Realigning Priorities: The U.S.-Japan Alliance and the Future of Extended Deterrence," Institute for Foreign Policy Analysis, March 2009, 44–49, <http://www.ifpa.org/pdf/RealignPriorities.pdf>.

³⁹ Katsuhisa Furukawa, "Japan's Policy and Views on Nuclear Weapon: A Historical Perspective," *Jebat: Malaysian Journal of History, Politics, & Strategic Studies* 37 (2010): 21–22.

adversaries from taking Japan's non-nuclear status for granted. In short, given Japan's level of technological sophistication, stable civil-military relations, accessible and plentiful plutonium stockpiles, self-contained nuclear fuel cycle, and history of success in "spinning on" commercial technologies, the country's nuclear hedge remains intact and credible.⁴⁰

Extended Deterrence 2.0

The U.S.-Japan alliance and its extended deterrent have enabled the nonproliferation policies that help Tokyo signal its intention to refrain from breaking out with its own nuclear arsenal. Another vital factor has been the absence of a consistent existential threat to Japan. Whenever one or both of these factors seems to shift, signs of reconsideration in Tokyo become apparent and subtle reminders that Japan has other nuclear options are issued to Washington. Japan has long understood how important the nonproliferation objective is to the United States, and how to use it for policy leverage.⁴¹

Primacy of Reassurance

Japanese policymakers often remind their U.S. and regional counterparts (both privately and publicly) about the importance of the U.S. nuclear umbrella and Japan's own ability to go nuclear if necessary. As we have noted, then prime minister Sato made such a statement in 1964 and 1965, as did former prime minister Morihiro Hosokawa in 1998, opposition leader Ichiro Ozawa in Beijing in 2002, and foreign minister Aso after North Korea's 2006 nuclear test.⁴²

⁴⁰ The U.S. Department of Energy reports that reactor-grade plutonium could be used to produce reliable weapons comparable to those produced using weapons-grade plutonium. See Marvin Miller, "Japan, Nuclear Weapons, and Reactor-Grade Plutonium" (paper presented to a seminar at the Nuclear Control Institute, Washington, D.C., March 27, 2002), <http://www.nci.org/02NCI/04/mm-jpu-paper.htm>. For a history of technological "spin on" from commercial to military applications, see Richard J. Samuels, *"Rich Nation, Strong Army": National Security and the Technological Transformation of Japan* (Ithaca: Cornell University Press, 1994).

⁴¹ Green and Furukawa in "Japan: New Nuclear Realism" focus on this point. See also Steven Pifer, Richard C. Bush, Vanda Felbab-Brown, Martin S. Indyk, Michael O'Hanlon, and Kenneth M. Pollack, "U.S. Nuclear and Extended Deterrence: Considerations and Challenges," *Arms Control Series* 3 (2010).

⁴² One could also speculate that Japan's December 2008 declassification of the Sato-McNamara notes was another subtle reminder, coming as it did on the heels of the U.S. de-listing of North Korea as a state sponsor of terrorism, despite the lack of progress on verifying North Korean denuclearization promises.

Additional signals have been sent through Diet interpellations, as well as through unofficial channels and provocative political commentary.⁴³

Washington's response to these signals has been consistent. In 2006, then U.S. secretary of state Condoleezza Rice visited Japan and reaffirmed the United States' "will and capability" to meet the "full range of its deterrence and security commitments" in an attempt to reassure Japan that it is still well-protected under the U.S. nuclear umbrella.⁴⁴ President Obama offered similar public assurances after North Korea's subsequent tests in 2009 and 2013 when Prime Minister Abe asked him to reconfirm the U.S. commitment to defend Japan with "an unshakeable nuclear umbrella."⁴⁵

For now, reliance on U.S. extended deterrence persists even if discomfort with the status quo is growing. This discomfort stems from different sources. Some Japanese politicians and analysts are worried that a policy designed for a bipolar world order will become less reliable in a multipolar environment filled with regional nuclear powers. Japan could, in this formulation, become "detached" from U.S. strategic thinking.⁴⁶ While some seek to prevent this through closer ties with Washington, others chafe under the postwar legal and diplomatic restraints that Japan agreed to live with for the sake of economic development; they would pursue a different postwar relationship with the United States by taking more security and diplomatic matters into their own hands.

Yet the Japanese express concern about extended deterrence in contradictory ways. Whereas once they worried about the U.S. commitment when North Korean nuclear weapons could *not* reach the continental United States—i.e., that Washington might prioritize proliferation over the medium-range missile threat—now that the prospect of North Korea targeting the U.S.

⁴³ Although there were no mentions of "extended deterrence" in Diet hearings in 2008, there were 68 in 2009 and 58 in 2010. See <http://kokkai.ndl.go.jp/>. There is also a long history of comments by "autonomists" outside government, such as Ikutaro Shimizu, Nishihachi Hyodo, Tadae Takubo, and Terumasa Nakanishi, who have pressed Japan to break away from U.S. security guarantees and develop its own nuclear arsenal. See Kamiya, "Nuclear Japan," 66–67; and Furukawa Katsuhisa, "Making Sense of Japan's Nuclear Policy: Arms Control, Extended Deterrence, and the Nuclear Option," in Self and Thompson, *Japan's Nuclear Option*, 111.

⁴⁴ "Remarks with Japanese Foreign Minister Taro Aso after Their Meeting," U.S. Department of State, October 18, 2006.

⁴⁵ *Sankei Shimbun*, February 22, 2013.

⁴⁶ Yukio Satoh, "Agenda for Japan-U.S. Strategic Consultations" (article adapted from a presentation made at the International Symposium on Security Affairs, Tokyo, November 18, 2009).

homeland has become more realistic, they express concerns because Pyongyang's nukes *could*. For example, a *Sankei Shimbun* editorial suggested that Washington could be "intimidated," quoting a former defense ministry official who opined that "we cannot completely rule out the possibility of Japan's being cut off from U.S. nuclear strategy."⁴⁷

In the case of China, the allies' superiority in conventional forces appears more important than the nuclear balance for now, especially as the U.S. arsenal shrinks. This comes in part from a core challenge of extended deterrence, wherein a deterrence provider seeks to limit a conflict to the region it is protecting in order to avoid an all-out war that might entangle its homeland. Based on this logic, while Washington will do everything it can to prevent the escalation or expansion of an East Asian regional conflict, if the U.S. military cannot dominate conventionally, Washington might default to accommodation rather than resort to nuclear weapons. As one former diplomat explained, "the conventional superiority advantage is critical, because it obviates the whole debate about whether or not Washington would 'sacrifice Los Angeles to save Tokyo' in a nuclear exchange."⁴⁸ Consequently, even though nuclear weapons are a major psychological component of extended deterrence (and certainly the most talked about), Japan is also focused on the U.S. projection of conventional power, which is under strain from U.S. budget politics, Chinese military developments, and from Japan's unwillingness to invest in its own defense.

The United States' budget problems, coupled with its efforts to reduce nuclear weapons globally, exacerbate a concern some have in Japan over the long-term durability of the U.S. nuclear infrastructure. By some measures, U.S. nuclear capabilities have atrophied over time. The United States has not developed a new warhead in over 25 years, and it has not tested a weapon since 1992. The U.S. Departments of Defense and Energy stated in 2008 that the United States "is now the *only* nuclear weapons state party to the NPT that does not have the ability to produce a new nuclear warhead."⁴⁹ The Obama administration is making some investments to

⁴⁷ *Sankei Shimbun*, February 22, 2013.

⁴⁸ Author's interview with a former MOFA official, August 1, 2007.

⁴⁹ "National Security and Nuclear Weapons in the 21st Century," U.S. Department of Energy and U.S. Department of Defense, September 2008 (emphasis in the original). Some argue that since the United States has no need to develop a new warhead or, given the size of its database, to test one, the term "atrophied" is hyperbolic. Others highlight U.S. investments in expensive testing tools – such as the National Ignition Facility – that bolster U.S. confidence in the reliability of its arsenal. Authors' personal communication with Vipin Narang, June 9, 2013 and James Acton, July 8, 2013.

upgrade existing nuclear infrastructure, but Washington will soon face tough and expensive choices about what kind of nuclear deterrent the United States (and its allies) should have in the future.

Some U.S. defense planners believe that when modern security problems are pushed to the higher rungs of a conflict-escalation ladder, the nuclear arsenal inherited from the Cold War will prove to be inappropriate for uses beyond deterring a large-scale nuclear attack against the United States or a close ally. As former deputy secretary of defense John Hamre observed, “the Cold War left us with a massive inventory of [nuclear] weapons we no longer need... [and] a shrinking community of nuclear experts hold on [to it] as a security blanket for a future they cannot define.”⁵⁰

Recent U.S. administrations have believed that deterrence through conventional weapons is decisively more credible than through any existing nuclear alternative. The challenge, however, is that continued U.S. investment in conventional military superiority is precisely what drives weaker states to pursue asymmetric solutions with nuclear weapons (e.g., North Korea and Iran) and prompts other major powers to keep pace with their own military investments (e.g., China), further worrying regional allies like Japan. There is no easy balance that truly guarantees security through strength without feeding into a broader security dilemma.

Given the rising profile of these challenges since 2001, the United States and Japan began bilateral consultations in 2009 on strategic issues raised by the impending U.S. Nuclear Posture Review (NPR) and Quadrennial Defense Review (QDR). For the first time, Japan moved onto the path of officially discussing and even influencing U.S. nuclear strategy and force planning, something to which the United States’ NATO partners had long become accustomed. Japan had been unsettled by prior NPRs that unilaterally shifted the U.S. force posture with little consultation.⁵¹ It was concerned that the United States might reach a decision to accommodate North Korea, move toward a “no first use” policy on nuclear arms, or retire nuclear weapons systems, particularly the nuclear *Tomahawk* cruise missile (TLAM/N), without deploying compensating capabilities.⁵²

⁵⁰ John J. Hamre, “Toward a Nuclear Strategy,” *Washington Post*, May 2, 2005.

⁵¹ For similar reasons, the United States initiated a dialogue with South Korea at around the same time.

⁵² For Japanese concerns about “no first use,” see Satoh, “Agenda” and Yukio Satoh, “*Kakugunshuku Jidai no Nihon no Anzen Hoshō*” [Japanese National Security in an Age of Nuclear Arms Reduction], *Gaiko Forum*

During this time, Japanese officials reportedly gave American interlocutors a “non-paper” that described key criteria for sustaining extended deterrence. The paper highlighted reliability (i.e., confidence that warheads will function properly), flexibility (holding different targets at risk), responsiveness, discrimination (keeping low-yield options), and the ability to be either stealthy or visible, as warranted by the situation.⁵³ While there was some doubt at the time about how high up this paper had been approved within the Japanese government, aspects of these criteria continue to be raised by Japanese officials, and the continuation of bilateral consultations on extended deterrence suggests that the allies have plenty to discuss.⁵⁴ These criteria appear to reflect real concerns in Japan that require continued alliance attention.

The success of the bilateral NPR consultations led both sides to want to continue talks, and in March 2011 they “regularized” the Extended Deterrence Dialogue (EDD). The EDD is now a biannual event, with one of the meetings often involving a visit to a deterrence-infrastructure site. In 2013, for example, this included a tour of Naval Base Kitsap in Washington State to see the submarine leg of the nuclear triad and Trident missile facilities.⁵⁵ These discussions are not trivial conversations or mere photo opportunities. They are a joint exploration by knowledgeable officials of current and emerging nuclear threats to the alliance, along with possible deterrence strategies.⁵⁶

The site visits are thorough and underscore the fact that U.S. declaratory statements are backed by demonstrable capabilities, with the human capital being among the most important. Site visits make the U.S. nuclear umbrella visible and tangible for Japanese officials, and they

(2009): 46–49. For concerns about the TLAM/N, see Hans M. Kristensen, “U.S. Navy Instruction Confirms Retirement of Nuclear Tomahawk Cruise Missile,” FAS Strategic Security Blog web log, March 18, 2013.

⁵³ Hans M. Kristensen, “Japan’s Nuclear Secrets,” *Sekai*, October 2009, <http://www.fas.org/programs/ssp/nukes/publications1/Sekai2009.pdf>.

⁵⁴ For suggestions that these criteria are not representative of government or citizen views, see Gregory Kulacki, “Japan and America’s Nuclear Posture,” Union of Concerned Scientists, March 2010, <http://www.ucsusa.org/assets/documents/nwgs/japan-american-nuclear-posture.pdf>. Japanese officials mentioned these criteria in numerous author interviews between 2010 and 2013.

⁵⁵ Kevin Baron, “U.S., Japan Met to Talk Nuclear Deterrence,” *Foreign Policy*, E-Ring web log, April 12, 2013, http://e-ring.foreignpolicy.com/posts/2013/04/12/us_japan_met_to_talk_nuclear_deterrence.

⁵⁶ This is based on interviews with participating U.S. and Japanese officials and military officers in April 2013. The two sides are led by officials from the Japanese Foreign and Defense Ministries and the U.S. State and Defense Departments at the deputy director general and deputy assistant secretary levels, respectively.

highlight the significant investments that support it. Both countries' principals hope that, over time, the EDD will also enhance deterrence by better integrating nuclear and conventional capabilities within the alliance for a tailored deterrence strategy, especially vis-à-vis North Korea. The EDD also provides Japan with an official channel to share its perceptions about extended deterrence with the United States, which makes the dialogue a useful bellwether for how the Japanese government feels about its nuclear hedge.

The U.S. side reportedly is pleased that the EDD has deepened Japan's understanding of extended deterrence and provided a better appreciation of the role played by conventional forces and missile defense, including high-end missile-tracking radar deployments in Japan.⁵⁷ Still, the Japanese side appears to have an appetite for continued dialogue. Security planners in Tokyo acknowledge that discussions are "far deeper than before," but some express concern that Washington will continue to surprise them.⁵⁸ Reaffirmation of U.S. commitments and reliability alone is no longer sufficient. The EDD portends a more collaborative form of deterrence that encompasses the full spectrum of conventional and nuclear capabilities possessed by the allies. Japanese strategists who once expressed little more than "sheer and total dependence upon the American deterrent" now understand that assuaging their abandonment fear requires more Japanese involvement in lower (conventional) thresholds of potential conflict, and they seek greater input into Washington's nuclear doctrine and priorities. The EDD will have to balance this carefully.⁵⁹

External Threats

While Washington has some control in addressing the reassurance factor, it faces limits when it comes to threats and threat perceptions. North Korea is a primary concern for Japan, largely because Pyongyang appears to care little about its people and invests heavily in nuclear and missile programs. North Korea's nuclear capability could make the leadership even more reckless. Should the regime face imminent collapse or preemptive attack, it might judge that it

⁵⁷ Huntley, "Speed Bump on the Road to Global Zero," 16, 21.

⁵⁸ Author's interview with a senior defense planner in Japan's Ministry of Defense, Tokyo, March 25, 2013.

⁵⁹ Paul J. Saunders, "Extended Deterrence and Security in East Asia: A U.S.-Japan-South Korea Dialogue," Center for the National Interest, January 2012, <http://www.cftni.org/2012-Extended-Deterrence-In-East-Asia.pdf>.

has little to lose (and could even forestall outside interference) by striking Japan with a nuclear weapon. There are also questions about whether or not Pyongyang can maintain effective command and control over these weapons.

Washington's official assessments of North Korea's nuclear capability are written vaguely but express confidence that the North will be able to produce nuclear-tipped missiles in the not-too-distant future and that their accuracy will improve.⁶⁰ To strike Japan, North Korea could use some of its estimated two hundred Nodong medium-range ballistic missiles, which have a range of 1500 kilometers and a payload of one ton. North Korea is also developing a land-based intermediate-range missile (Musudan) that might be able to reach Okinawa and Guam. Although the accuracy of these missiles has been derided in the past, a battery of test launches in July 2006 suggested that North Korea had improved their performance, and in December 2012 it put a satellite into orbit for the first time using a three-stage rocket.⁶¹

A key problem for extended deterrence is the allies' limited understanding of Pyongyang's strategic calculus and Washington's unexpressed preference to deal with North Korean nuclear threats by conventional methods. There could come a point where Japanese leaders feel that they need more control over the means of response. A 1995 JDA report made this point while otherwise dismissing the value of a nuclear option for Japan: "North Korean nuclearization...is not an issue that cannot be a condition for discussing the possibility of Japan going nuclear in the future."⁶² In other words, the JDA identified North Korea as a threat that could cause Japan to go nuclear.

Compared to North Korea, China's nuclear arsenal and conventional capabilities are much larger and weigh heavily on the minds of Japanese defense planners. The main worry is not simply that China's defense budget has almost tripled since 2001 to become the world's second

⁶⁰ *Christian Science Monitor*, April 12, 2013 . Note, though, that inaccuracy can be an even greater threat—for example, if an adversary targets the Sea of Japan but hits an urban center.

⁶¹ Yossef Bodansky, "DPRK Strategic Command and Control, Missile Launch Exercise Marks Operational Watershed," *Defense & Foreign Affairs Special Analysis* 24, no. 42 (2006).

⁶² Japan Defense Agency, "Concerning the Problem of the Proliferation of Weapons of Mass Destruction," 1995, 34, <http://www.ucsusa.org/assets/documents/nwgs/1995jdastudy.pdf>.

largest.⁶³ Rather, it is the nature of China's military modernization and the relatively quick and substantial investments in capabilities that are aimed at the allies' ability to dominate the skies and seas around East Asia. This strategic force modernization raises the potential costs that U.S. policymakers would need to weigh when considering the option of intervening against Chinese interests on behalf of Japan or Taiwan.

Another long-term problem is that China keeps building new nuclear warheads (up to ten in 2012). Although official Chinese policy states that China will not use nuclear weapons first—or ever against a non-nuclear weapon state—its intimidation tactics in the maritime and cyber domains have worried some in Japan that these tactics could someday spread to the nuclear realm.⁶⁴ The People's Liberation Army (PLA), after all, manages one of the world's most active ballistic-missile programs. Many of its tactical weapons have enhanced ranges, accuracies, and payloads, and some put Okinawa within range when forward-deployed. Upgrades to Chinese missile warheads—including multiple independently targeted re-entry vehicles—are enhancing Beijing's deterrent and strategic-strike capabilities vis-à-vis Japanese and U.S. missile defenses.⁶⁵ These slow-moving upgrades to the quality and quantity of Chinese nuclear weapons have some in Tokyo wondering whether Beijing will eventually seek nuclear parity with the United States, something that would require considerable time and investment, since the U.S. arsenal is significantly larger.

Japanese strategists have to ask how much vulnerability the United States is willing to tolerate amid China's strategic modernization and what it is prepared to do on Japan's behalf, if anything, in response to China's moves.⁶⁶ Some prominent Japanese analysts suggest that a national nuclear deterrent, even if it were insufficient to deter a force as big as China's in all circumstances, could complicate strategic calculations in Beijing to the extent that China would think twice before threatening to use (or actually using) its own nuclear forces in a regional crisis

⁶³ U.S. officials estimate that China's actual defense spending was roughly \$60 billion in 2001 and that it could be as high as \$215 billion in 2012. See U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2013*, annual report prepared for Congress (Washington, D.C., 2013), 45.

⁶⁴ For China's warhead increase, see the press release for the 2013 SIPRI Yearbook, Stockholm International Peace Research Institute (2013), June 3, 2013, http://www.sipri.org/media/pressreleases/2013/YBlaunch_2013.

⁶⁵ U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2011*, annual report prepared for Congress (Washington, D.C., 2011), 34.

⁶⁶ Brad Roberts, "Nuclear Minimalism," *Arms Control Today* 37, no. 4 (2007).

or conflict.⁶⁷ In short, Japan faces its own threats and has its own interests. As Campbell and Sunohara suggest, “the persistence of a Japanese-American alliance so robust that it can indefinitely persuade Japanese leaders from acquiring nuclear weapons cannot be guaranteed.”⁶⁸

Prospects and Implications for a Nuclear Weapons Breakout by Japan

At the moment, the likelihood that Japan would build its own nuclear weapons is low. Constraints are multiple and significant. But they are not fixed, and it is worthwhile to examine the conditions, both internal and external, under which these constraints could loosen and Japan might change course.

Internal Factors

Public opinion. The “nuclear allergy” metaphor was coined in part to describe the Japanese public’s aversion to visits by U.S. Navy vessels that might be carrying nuclear weapons.⁶⁹ Japanese perceptions were colored not only by the bombs dropped on Hiroshima and Nagasaki in 1945 but also by other incidents, such as in 1954 when a U.S. nuclear test at Bikini Atoll exposed 23 Japanese fishermen to high levels of radiation, eventually killing one and inspiring the *Godzilla* film series that sensationalized the potential danger and unpredictable nature of nuclear weapons.⁷⁰

It was against this backdrop that then prime minister Sato announced the three non-nuclear principles, a policy that maintains strong public support. As the Cold War wound down, polls showed that more than 75% of Japanese respondents still agreed with the three principles, and similar polls in 2006 and 2013 produced the same result. A 1998 Gallup Poll found that only 16% of the nation was afraid of being attacked by another country using nuclear weapons and

⁶⁷ See the arguments by Hisahiko Okazaki, “Mazu Gijutsutekina Men wo Tsumeyo” [First, We Need to Examine the Technical Feasibility of a Nuclear Option], *Shokun!* August 2003; and Group Ichigaya, “Kakubusō naki Nippon” ni Asu wa Nai [There is no Tomorrow for a Japan Without Nuclear Weapons], *Shokun!* February 2007.

⁶⁸ Campbell and Sunohara, “Japan: Thinking the Unthinkable,” 237.

⁶⁹ Glenn D. Hook, “The Nuclearization of Language: Nuclear Allergy as Political Metaphor,” *Journal of Peace Research* 21, no. 3 (1984): 259–75.

⁷⁰ Michael Schaller, *Altered States: The United States and Japan since the Occupation* (New York: Oxford University Press, 1997): 71–75.

89% felt no need for Japan to have nuclear weapons.⁷¹ Being a non-nuclear weapons state had, it seemed, become part of Japanese national identity.⁷²

The rise of China and the belligerency of North Korea, however, have raised awareness about the U.S. nuclear umbrella: only about 20% thought the umbrella was “necessary” in 1995, but almost half thought so in 2010.⁷³ Still, even when candidates for the national Diet were polled on the issue of Japan developing its own nuclear weapons after two North Korean nuclear tests, more than half did not think such an option should ever be considered; only a third favored keeping this option open for the future, depending on the international situation.⁷⁴

The 2011 Fukushima nuclear accident hardened popular opinion against all things nuclear in Japan and led the government to shut down Japan’s nuclear-power infrastructure.⁷⁵ Yet despite public opinion and a more independent regulatory system, the current Abe administration and private industry are pushing to revive and sustain the nuclear sector. With little organized political opposition to the conservative, business-friendly LDP government, we have seen Japan’s nuclear industry begin to regain its footing. It is already aggressively pursuing development opportunities in Asia, Europe, and the Middle East.

The return to power of the LDP in 2012 is a reminder that overwhelming majorities can vote against their polled preferences and that even democratic governments can act independently of public opinion. The connection of public opinion to policymaking is particularly tenuous with respect to national security. For example, there was considerable

⁷¹ “Shitsumon to Kaito – Bōei Mondai, Asahi Shimbun Seron Chōsa Shōhō” [Questions and Answers on Defense Issues: Report on *Asahi Shimbun* Opinion Survey], *Asahi Shimbun*, November 6, 1988; “Hikaku Sangensoku “Mamorubeki” 8wari, “Kakuhoyu Giron” wa Sanpi Nibun / Yomiuri Shimbun Seron Chōsa ” [80% Want to Keep the Three Non-nuclear Principles: *Yomiuri* Opinion Poll], *Yomiuri Shimbun*, November 21, 2006; “Asahi Shimbunsha Yūsou Seron Chōsa, Shitsumon to Kaito” [Questions and Answers for *Asahi* Mail-in Survey], *Asahi Shimbun*, May 2, 2013; and “Gallup Japan Poll on the Ownership of Nuclear Weapons and the Threat of Nuclear War,” *Gallup News Service*, June 5, 1999.

⁷² Pifer et al., “U.S. Nuclear and Extended Deterrence,” 33.

⁷³ “Towareru Anpo, Nichibei Kankei” [Issues and the U.S.-Japan Alliance], *Asahi Shimbun*, November 11, 1995; and “[Genbaku tōka kara 65nen, Kienu Kaku no Kyōi]” [65 Years since the Atomic Bomb Was Dropped, the Nuclear Threat Remains], NHK Reporting Research and Surveys, October 2010.

⁷⁴ Kurozuappu 2012: Shuinsen Kouhosha Anketo, Hoshu Seneika no Jimin, Kakubusō “Kento Subekida” 38% ” [Close-up 2012: Lower House Survey, 38% Support Consideration of Nuclear Weapons], *Mainichi Shimbun*, December 8, 2012.

⁷⁵ See Samuels, 3.11: *Disaster and Change*, chap. 5.

opposition to the NPT from the media, business community, and public when Japan signed the treaty in 1970.⁷⁶ As we have seen, the decision to forgo an independent nuclear arsenal was based on realist calculations amid U.S. pressure, not on polling data. Campbell and Sunohara's conclusion is correct that "although public sentiment against nuclear weapons remains strong, its ability to fully inhibit the decisions of Japanese leaders should not be exaggerated."⁷⁷

Institutional opposition. Japanese political leaders considering nuclear breakout will face other obstacles besides public opinion, including opposition from an expanding variety of political, bureaucratic, and economic actors. For decades, bureaucratic responsibility for nuclear strategy resided solely in the Cabinet, with support from MOFA. Over time, however, the JDA—renamed the Ministry of Defense (MOD) in 2007—assumed a greater policy role. Nuclear power research and development, which is critical for any potential dual use, was split between the Ministry of International Trade and Industry (MITI)—now the Ministry of Economy Trade and Industry (METI)—and the Science and Technology Agency, which is now part of the Ministry of Education. Each had its own preferences.⁷⁸

In the economic realm, there are those whose interests lie in preserving a purely commercial exploitation of nuclear power.⁷⁹ Japan's utilities, the wider business community, bureaucrats charged with promoting economic growth, and politicians with ties to these interests are all powerful actors who would likely oppose a nuclear weapons program. In the event of a nuclear breakout, Japan's electric-power industry could be crippled by a loss of access to nuclear fuel and would possibly be required to return current fuel stocks, given that their purchase was predicated on peaceful use. Moreover, large manufactures such as Hitachi and Mitsubishi could be shut out of overseas nuclear-development projects, and there might be a wider economic

⁷⁶ George H. Quester, "Japan and the Nuclear Non-Proliferation Treaty," *Asian Survey* 10, no. 9 (1970): 766.

⁷⁷ Campbell and Sunohara, "Japan: Thinking the Unthinkable," 242. See also Paul Midford, *Rethinking Japanese Public Opinion and Security* (Stanford: Stanford University Press, 2011).

⁷⁸ According to one study, each policy silo acquired an independent veto on nuclear breakout. See Hymans, "Veto Players."

⁷⁹ Hughes, "International and Domestic Constraints."

backlash against Japanese firms in key markets like China and South Korea, as their governments hype the fear of a remilitarized Japan.⁸⁰

Prefectural governors also have an important vote on what kinds of nuclear-related activities can occur within their jurisdiction. In addition, some influential nonprofit organizations dedicated to preserving Japan's non-nuclear status gained strength following the Fukushima crisis.⁸¹ Proponents of changing the nuclear status quo in Japan would likely face numerous legal and bureaucratic hurdles, including the certainty of drawn-out legal challenges.

Although there is no question that weaponization would be difficult in Japan's contested political system, circumstances can change over time. Japan's robust democratic politics and its determined leadership have repeatedly demonstrated that opposition and veto power are not the same. The Japan-U.S. Security Treaty was ratified in 1960 over violent protests and widespread opposition and now is widely embraced. Japan's Self-Defense Forces, which began as the National Police Reserve during the Korean War, became a robust and lethal military force despite Japan's pacifist constitution and early public opposition. It has never been more widely embraced by the Japanese public than it is at present.

The postwar history of the Japanese military is filled with examples of government restrictions applied, only to be loosened at a later date. This was the case with Japan's acquisition of fighter jets (first denied, then allowed), as well as its acquisition of mid-air refueling capabilities, legislating an ability to deploy overseas, use of outer space for defense purposes, and now the possible development of a long-range strike capability.⁸² Moreover, while approval for a weapons-related program surely would be even harder to obtain from local officials than approval for nuclear-power reactors, it is worth noting that some prefectural governors, such as Issei Nishikawa from Fukui, support nuclear power as the leading employment vehicle in their prefectures. And some governors, like Shintaro Ishihara of Tokyo, openly argued for acquiring

⁸⁰ For further analysis of how nuclear plant exports have been central to Japan's "new growth strategy," see Samuels, *3.11: Disaster and Change*.

⁸¹ Samuels, *3.11: Disaster and Change*, chap. 6–7.

⁸² The Japanese government has studied and considered acquisition of a long-range conventional strike capability in the past, most notably during the National Defense Program Guideline review of 2004. A similar study is underway in 2013. Author's interview with Ministry of Defense official, February 20, 2013. For a list of the "salami slicing" of restrictions on the Japanese military, see Samuels, *Securing Japan*.

nuclear weapons. Weaponization work could be done in prefectures with supportive leaders, even if they hosted no reactors.

Finally, even if Japan's plutonium stockpile in Europe is out of reach and much of the separated fuel is controlled by private firms worried about repercussions in international markets, more than enough is held domestically under the aegis of the Japan Atomic Energy Agency (JAEA), a governmental unit. The rest is held by Japan Nuclear Fuel Limited, which is nominally a private firm, but one that performs public functions under close government supervision. Even allowing that only two tons of Japan's plutonium stocks is both owned by the state (through the JAEA) and present in Japan, and that this might be the only plutonium available for Japanese weapons, this amount alone would be enough to build a large nuclear arsenal of several hundred weapons. In short, it is not clear how much of a constraint contending interests, private ownership of weapons materiel, and the overseas location of much of Japan's plutonium would actually place on Japan if it were to decide to move from being a latent to an open nuclear weapons state. The motivation is the critical factor, not the obstacles.

Discount Factors

There are four additional constraints that would require leaders to discount the costs of dramatic policy change: (1) the vulnerability of the Japanese population to a first strike, (2) the undermining of Japanese diplomacy, (3) regional instability, and (4) damage to bilateral relations with the United States.

Japan's central vulnerability is its lack of strategic depth. The argument here is straightforward and has often been repeated. The majority of the Japanese population is clustered in a small number of densely populated urban centers. Because a first strike against Tokyo, Osaka, and Nagoya would cripple Japan, nuclear weapons have little military utility.⁸³ While superficially compelling, this argument is hardly dispositive. It did not prevent Great Britain or Israel, with their similar geo-demographic profiles and same primary ally, from developing nuclear arsenals. The Israeli case, in fact, impressed some Japanese with how vulnerability can be discounted in the face of an existential threat.⁸⁴ Nor would we expect a strike on New York or

⁸³ This was a central argument in every official study of the nuclear weapons option. See, for example, Hughes, "International and Domestic Constraints"; and Mochizuki, "Nuclear Taboo."

⁸⁴ Group Ichigaya, *Kakubusō naki Nippon* ni Asu wa Nai, 2007.

Los Angeles to be any less crippling to the U.S. national economy. Moreover, Japan's population density and vulnerability to a first strike—particularly when its arsenal is still limited—could provide a strong motivation to deploy an independent ability to wipe out North Korea's nuclear arsenal preemptively.

Second, there is the loss of benefits derived from Japan's diplomatic posture as a non-nuclear weapons state. Legal withdrawal from the NPT is technically very easy—it requires only a 90-day notice to the other parties to the treaty and the United Nations Security Council—but the costs associated with the repudiation of decades of Japanese diplomacy and the nullification of many of the bilateral agreements that undergird the Japanese nuclear-power program would require a steep discount by the country's decision-makers. Still, many of these leaders are concerned that the nonproliferation regime has been eroding, and Japanese diplomacy is already less strident on this point. Additionally, whether one agrees with this logic or not, supporters of a Japanese indigenous nuclear program have long argued that Japan neutered itself diplomatically by opting out of the nuclear club and that, from a realist perspective, Japan would fortify its diplomacy over the long run by changing its stance.

Third, a nuclear breakout would certainly trigger or accelerate a regional arms race—one that would require a considerably greater investment in defense than postwar Japan has heretofore accepted. If South Korea had not yet broken out, it surely would after a Japanese decision to do so. Koreans have long been suspicious of Japan's nuclear hedging, and the Korean media and its “unnamed” government sources regularly feed the perception that Japan is just a “few screwdriver turns” from a functioning weapon.⁸⁵ Even the former ambassador to Japan, Chul-hyun Kwon, explained on the record that “Japan didn't declare having nuclear weapons but they made the raw materials, and they...are in fact getting rid of the obstacles one by one as the opportunity offers. In the long term, I guess they are preparing for a nuclear weapon.”⁸⁶ A Japanese nuclear breakout would not surprise the ROK, but neither would it be met with sympathetic understanding.

⁸⁵ See, for example, Tae-Ho Kang and Park Jung Won, “[Ilbon Haek-mu-jang ha-myeon Hankookdo ‘mat-dae-eung’],” [Counter-action, if Japan Nuclear Armament,” *Hankyoreh*, October 19, 2006.

⁸⁶ Sang-Moo Hwang, “[Ilbon-eui Haek-mu-jang Chu-jin-kwah Dong-buk-ah Jung-sae],” [Sunday Consult Japan's Nuclear Armament and the Political Conditions on Northeast Asia], KBS News, July 1, 2012.

China and Russia would likewise respond by repositioning and possibly strengthening their strategic forces, and China in particular would push to isolate Japan diplomatically. Additionally, North Korea could be convinced that its reckless behavior has been rewarded with new alignments in the region. It is understandable, then, that many in Japan see no military benefit to be gained from breakout; instead, they worry that a new, higher-cost round in the extant security dilemma would detract from Japanese national security.⁸⁷ But if Japan acted in response to a breakout by South Korea or to significant provocation by other states, then, as Nobumasa Akiyama suggests, “nuclear proliferation in Asia...might lower the threshold even for Japan to violate international agreements and treaties.”⁸⁸

Fourth, the United States has worked ceaselessly since the 1960s to keep Japan from becoming a nuclear weapons state, arguing that extended deterrence is a nonproliferation tool. According to one confident former Japanese diplomat, “the United States would never allow Japanese nuclear weapons.”⁸⁹ But what if the drawdown in U.S. budgets and Washington’s desire to balance China collide on the Japanese archipelago? What if they meet in the form of a reversal of U.S. policy toward Japanese nuclear armament, especially against a backdrop of an even more dangerous North Korea that threatens to draw the United States into a nuclear war? Given current U.S. budgetary trends, exhaustion from more than a decade of war, and the United States’ refusal to act alone during the Arab Spring, it is not far-fetched to imagine Washington determining that it can no longer provide regional, much less global, strategic public goods on its own. In other words, it is hardly inconceivable that economic need and existential threat could trump vulnerability in nuclear strategy and overcome political constraint.

Durability of the U.S. Security Umbrella amid New Threats

Despite shifting threat perceptions among Japanese policymakers, Tokyo’s level of confidence in U.S. security guarantees remains high due to the Obama administration’s emphasis on diplomatic and military investments in Asia, Washington’s bipartisan emphasis on the

⁸⁷ Kitaoka Shinichi, “Kita no Kaku o Yokushi Suru Tame no Itsutsu no Sentakushi” [Five Options to Deter North Korea’s Nuclear Weapons], *Chūō Kōron*, December 2006.

⁸⁸ Akiyama, “Socio-political Roots,” 90.

⁸⁹ Author’s interview with a retired ambassador, Tokyo, March 27, 2013.

importance of alliances, and robust U.S. support for Japan during the tsunami and nuclear disaster in 2011. In the medium term, however, Japanese strategists are closely watching the U.S. response to Sino-Japanese confrontation in the East China Sea over the Senkaku/Diaoyu Islands. For many, this is a representative or test case of the United States' capacity and determination to deter Chinese aggression.⁹⁰ Moreover, an anticipated one-third drop in U.S. defense spending from 2010 to 2015 and congressional resistance to funding base realignment plans in the Asia-Pacific raise doubts for some in Japan about U.S. staying power in the region over the long term.⁹¹ Thus, while there is no imminent loss of confidence, certain trends are unsettling to the leadership in Tokyo.

One of these trends is the decline in the qualitative advantage that the allies have traditionally held over China's armed forces. As one analyst opined, "if the U.S.-China military balance in East Asia reaches parity, then the credibility of the U.S. nuclear umbrella will be gravely shaken."⁹² On this view, Chinese and North Korean nuclear-force modernization programs will exacerbate the decoupling problem for Japan. But such modernization could also accelerate U.S. rethinking of a possible Japanese breakout. Although a decision by Japan to acquire nuclear weapons may not be in the United States' current interest, Washington's ability and willingness to prevent it would wane over time if China's capabilities were to continue to expand and especially if North Korea's status as a nuclear power were to become a normal part of the strategic environment in Asia. Under such conditions, Japan's desire for nuclear weapons would appear more reasonable and harder to counter.⁹³

The United States is taking steps to reassure Japan and shore up deterrence through close consultation and efforts to update plans and capabilities. But if Washington decides to sustain extended deterrence, it will have a tougher time demonstrating consistency and endurance. In

⁹⁰ Author's interviews with an LDP Diet representative, a retired ambassador, a former senior intelligence official, and an adviser to the prime minister's office, Tokyo, March 26–27, 2013.

⁹¹ Clark A. Murdock, Kelley Sayler, and Ryan A. Crotty, "The Defense Budget's Double Whammy: Drawing Down while Hollowing Out from Within," Center for Strategic and International Studies (CSIS), October 18, 2012, http://csis.org/files/publication/121018_Murdoch_DefenseBudget_Commentary.pdf.

⁹² Nakanishi Terumasa, "Nippon Kakubuso" no Giron wo Hajimeru Toki [The Start of Japan's Nuclear Debates], in "Nippon Kakubuso" no Ronten – Kokka Sonritsu no Kiki wo Ikinuku Michi [Debates on "Japan's Nuclear Armament": How to Survive This Critical Moment in National Existence], ed. Nakanishi Terumasa (Tokyo: PHP, 2006).

⁹³ Author's personal communication with Thomas Christensen, February 15, 2013.

years past, the United States' reassurance methods fluctuated, beginning with significant forward presence in the region (both conventional and nuclear) that paved the way for Japan's low-cost strategy of basic defense. When the Cold War ended and U.S. reliance on Japan seemed more equivocal, symbols of the United States' presence and commitment became important, such as the maintenance of force levels in the region above 100,000 personnel.⁹⁴ When U.S. force levels eventually dropped, Washington emphasized underlying capabilities as the critical factor, and this was also true on the nuclear front—for example, touting the TLAM/N to compensate for lower numbers and then conventional strength and dual-capable aircraft when the TLAM/N was retired.⁹⁵ If the allies' conventional advantage over China declines, however, and U.S. defense planners decide that U.S.-based strategic bombers can address nuclear threats more efficiently than introducing dual-capable aircraft into the theater, then Washington's "reassurance story" will no doubt need to change again.

Alternative Strategic Paths

To this point, our review of Japan's nuclear weapons options has elided at least four alternative paths to more independent nuclear deterrence for Japan within the alliance framework. The first three involve sharing nuclear weapons that are not of indigenous design and over which Japan would have less than full control. The fourth involves significant enhancement of Japan's conventional strike capabilities. All of these options would require major changes to Japanese defense policy and possibly constitutional reinterpretation or revision.

In the first of the three acquisition scenarios, Japan could opt to buy or lease U.S. weapons. Japanese analysts have raised the possibility of a lease deal with a sunset provision for up to two hundred nuclear warheads with cruise missiles. Under the agreement, the United States would retain control over the electronic maps loaded onto the warheads and a right of launch refusal.⁹⁶

⁹⁴ See "Japan-U.S. Joint Declaration on Security: Alliance for the 21st Century," Ministry of Foreign Affairs of Japan, April 17, 1996, <http://www.mofa.go.jp/region/n-america/us/security/security.html>.

⁹⁵ For repeated emphasis of the role of "unrivaled" U.S. conventional military "preeminence," as well as mention of the option to forward deploy dual-capable aircraft and the potential value of a conventional "prompt global strike" weapon, see "Nuclear Posture Review Report," U.S. Department of Defense, April 2010, 6, 7, 20, 28, <http://www.defense.gov/npr/docs/2010%20nuclear%20posture%20review%20report.pdf>.

⁹⁶ Masahiro Matsumura, "Prudence and Realism in Japan's Nuclear Options," Brookings Institution, November 10, 2006, http://www.brookings.edu/opinions/2006/1110japan_matsumura.aspx.

Although such an approach would still require Japan to cross many of the same legal and diplomatic hurdles that it would face in building its own deterrent, while adding new hurdles for the United States, it would be the quickest and cheapest way for Japan to acquire and maintain nuclear weapons and could be easily reversed if desired. For example, in the event of Korean unification and denuclearization, Japan could simply terminate the lease and return the weapons and infrastructure. Among the many complicating factors, it is hard to imagine the U.S. government providing active support to a Japanese nuclear weapons program if South Korea is emphatically opposed. Presumably, Seoul would have taken a nuclear step first (with some sympathetic understanding from Washington) and would grudgingly accept a Japanese nuclear lease.

The second option could be modeled on the extant arrangement between the United States and the United Kingdom, whereby Britain leases U.S.-made Trident II missiles, co-develops aspects of the submarine platform, and manufactures its own nuclear warhead according to certain U.S. specifications, including the use of some U.S.-made non-nuclear components.⁹⁷ This approach would be less reversible and more expensive than the “turn key” lease method described above, but it would allow Japan to scale up its nuclear program more quickly and somewhat more affordably compared to home-grown options. Either of these approaches, however, assumes a U.S. attitude toward the NPT and the Missile Technology Control Regime that is fundamentally different from its current stance, and would be feasible only in the context of a collapse of the global nonproliferation regime. Still, one can imagine how U.S. policymakers could view this kind of approach as preferable to a purely indigenous Japanese effort, not only because it would maintain alliance ties but also because it would provide for a coordinated means of rollback if future conditions permitted.

A third alliance-based option could follow the NATO model of nuclear burden-sharing, by which U.S. nuclear weapons are deployed on allied territory under U.S. control until a crisis erupts. At that point, following U.S. authorization, responsibility for the delivery of the weapons devolves to the allied host state.⁹⁸ Before then, the ally would participate in command and

⁹⁷ See Jenifer Mackby and Paul Cornish, eds., *U.S.-UK Nuclear Cooperation after 50 Years* (Washington, D.C.: CSIS Press, 2008).

⁹⁸ See Catherine McArdle Kelleher, “NATO Nuclear Operations,” in *Managing Nuclear Operations*, ed. Ashton B. Carter, John D. Steinbruner, and Charles A. Zraket (Washington, D.C.: Brookings Institution, 1987); Hans M. Kristensen, “U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War

control arrangements and its pilots would be trained in nuclear warfighting doctrine. Although such burden-sharing arrangements were more widespread during the Cold War, there remain approximately 150 B-61s deployed at bases controlled by the allied host nations Turkey, Italy, Belgium, the Netherlands, and Germany for delivery by their F-16s or Tornados. The legality of these arrangements, however, has long been disputed under Articles 1 and 2 of the NPT.⁹⁹

Each of these options goes beyond Japan possessing a few bombs but falls short of a fully independent and survivable Japanese nuclear force. All three would, of course, require relaxation of Japan's three non-nuclear principles and the reintroduction of U.S. nuclear weapons to bases on the archipelago. Each would allow more rapid deployment than a purely indigenous deterrent, and each requires U.S. cooperation. Many Japanese analysts who write on nuclear issues, however, advocate greater autonomy. Nisohachi Hyodo, for example, has argued for a force of two submarines roaming separate seas with one missile each, while Kan Ito and Yasuhiro Nakasone recommend "small size" Japanese nuclear weapons.¹⁰⁰ Mitsuo Takai argues, however, that a reliably survivable Japanese nuclear strategy to deal with China or North Korea would require a much larger force—up to six nuclear submarines with three hundred high-yield nuclear warheads—while Takayuki Nishi has suggested that even this might be too small a force to deal with a foe like China.¹⁰¹ Either way, this level of militarization would contradict the Japanese Constitution's prohibition of "war potential," as currently interpreted by the government, which makes a distinction based on scale of destructive power.¹⁰² Ultimately, Nishi's consideration of nuclear strategy convinces him that the best approach for Japan remains nuclear abstention coupled with missile defenses, as long as the growth of China's nuclear missile force levels off.

Planning," Natural Resources Defense Council, February 2005, <http://www.nrdc.org/nuclear/euro/euro.pdf>; and Thomas Maettig, "Tactical Nuclear Weapons in Germany: Time for Withdrawal?" Nuclear Threat Initiative, March 1, 2008, <http://www.nti.org/analysis/articles/tactical-nuclear-weapons-germany/>.

⁹⁹ Author's personal communication with Owen Cote, June 10, 2013. On the legal questions, see Otfried Nassauer, "Nuclear Sharing in NATO: Is It Legal?" Berlin Information Center for Transatlantic Security, April 2001, <http://www.bits.de/public/articles/sda-05-01.htm>.

¹⁰⁰ Yoshihara and Holms, *Second Nuclear Age*, 124–25.

¹⁰¹ Takayuki Nishi, "Nuclear Strategy as a Constraint on Japanese Nuclear Armament" (paper presented at the 52nd annual convention of the International Studies Association, Montreal, March 17, 2011).

¹⁰² Ministry of Defense, *Defense of Japan 2013*, p. 143
http://www.mod.go.jp/e/publ/w_paper/pdf/2013/22_Part2_Chapter1_Sec2.pdf

This raises the fourth alternative deterrence strategy, a much discussed non-nuclear one that would maintain Japan's nuclear hedge but entail a considerable enhancement of its conventional offensive capabilities. As one defense planner has explained, there is much more Japan can do to augment its deterrent short of nuclear weapons breakout.¹⁰³ Although Japan's self-imposed ban on the acquisition of long-range strike capabilities has been thinned by successive reinterpretations of the constitution, the MOD budget has remained static, and the military has been slow to acquire the carriers, bombers, strike fighters, and ballistic or cruise missiles that would expand Japan's capacity to punish adversaries at a distance.¹⁰⁴ But some Japanese leaders are seriously considering the need to augment U.S. capabilities. One senior military officer invoked a common metaphor: "we have been at our parents' knee [*oya no sune ni kajiru*], but U.S. shins have become thin."¹⁰⁵ He joins a chorus of defense planners who advocate changing the extant alliance model in which the United States is the "sword" and Japan is the "shield" to one in which both countries have offensive capabilities sufficient to deter regional aggression.¹⁰⁶ As Narushige Michishita has reported, "the most widely debated" military option for Japan going forward is the acquisition of strike capabilities for preemptive counterforce operations against hostile bases.¹⁰⁷

This "strike capability" movement reached a climax during the drafting of the National Defense Program Guidelines in 2004, when the JDA sought funds to develop long-range,

¹⁰³ Author's interview with a National Institute for Defense Studies official, Tokyo, March 25, 2013. See also Mochizuki, "Nuclear Taboo," 314. This is consistent with the plans of the Obama administration. See *Washington Post*, June 19, 2013.

¹⁰⁴ The Self-Defense Forces have acquired the basics for counterforce conventional strike, including attack fighters, airborne refueling, and joint direct attack munitions that convert gravity bombs into precision-guided munitions. See Michishita, "Japan's Response," 108.

¹⁰⁵ Author's interview with Japanese military officer, Tokyo, March 27, 2013.

¹⁰⁶ This converging sentiment was heard in multiple interviews with senior officials at the Ministry of Defense and with former MOFA and intelligence officials in Tokyo, March 25–27, 2013.

¹⁰⁷ Michishita, "Japan's Response," 107. He adds that some (unnamed) security specialists think that acquisition of these capabilities could actually undermine the alliance by giving Washington the option of not defending Japan. For a 2006 study on this issue by an influential Japanese analyst, see Sugio Takahashi, "Dealing with the Ballistic Missile Threat: Whether Japan Should Have a Strike Capability under Its Exclusively Defense-Oriented Policy," *NIDS Security Reports*, no. 7 (2006): 79–94.

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surface-to-surface missile technology.¹⁰⁸ But the LDP's coalition partner, the New Komeito Party, vetoed that proposal and the plan was dropped. The Abe administration put this issue back on the table for consideration in 2013 after South Korea's decision in 2012 to extend the range of its ballistic missile forces to eight hundred kilometers provided diplomatic cover. Such a shift could enhance Japan's deterrence posture, whether or not it were integrated with U.S. military doctrine in ways that would make deterrence more effective and credible; however, it also risks complicating the regional security dilemma and engendering domestic political blowback. Washington has long pushed for a more militarily capable Japan but is reluctant to weigh in publicly on this sensitive issue, lest the United States be viewed as either encouraging or restraining Japan. On this latter point, in particular, the U.S. side is aware that efforts to dissuade Tokyo from adding strike capacity could be unsuccessful and might accelerate the loss of Japanese confidence in its ally, thereby prompting an even quicker development of independent capabilities.

Conclusion

Henry Kissinger has suggested that the logic of war shifted with the introduction of nuclear weapons in ways that are connected directly to issues examined in this chapter. He stated that before the nuclear age, "the consequences of abandoning an ally were deemed to be more risky than fulfilling one's obligations. In the Nuclear Age, this rule no longer necessarily held true; abandoning an ally risked *eventual* disaster, but resorting to war at the side of an ally guaranteed *immediate* catastrophe."¹⁰⁹ It is of no little significance that this passage is well known among Japan's strategic elites, many of whom point to the declining credibility of extended deterrence and the fact that nonproliferation norms have also withered.

Campbell and Sunokawa, who insist that a Japanese nuclear breakout "would be potentially catastrophic," have warned U.S. leaders and public commentators against raising

¹⁰⁸ "Draft of Next Midterm Defense Buildup Plan Seeks Missile Research," Kyodo News, December 3, 2004, <http://www.thefreelibrary.com/Draft+of+next+midterm+defense+buildup+plan+seeks+missile+research.-a0126082637>.

¹⁰⁹ Henry Kissinger, *Diplomacy* (New York: Simon and Schuster Paperbacks, 1994), 608. Note too that as Secretary of State, Kissinger managed alliance relations successfully and assured allies Washington would come to their aid.

questions about extended deterrence or encouraging Japan to consider alternatives to its nuclear hedged status quo: “American leaders and influential commentators both within and outside the government should never signal to the Japanese, even inadvertently, that they actually favor Japan’s acquisition of nuclear weapons.”¹¹⁰ But as we have seen, thoughtful Japanese security specialists have not needed encouragement to cast an unsentimental and realistic eye on the future of extended deterrence. They have needed no prompting to raise questions about Japan’s strategic defense and to interrogate U.S. overextension.

Equally thoughtful international security specialists in the United States have begun asking similar questions. Michael J. Mazarr, a professor of national security strategy at the U.S. National War College, is concerned about U.S. “strategic insolvency”—the pursuit of “yesterday’s strategy under today’s constraints” and the United States’ growing inability to manage the gap between its strategic commitments and its national objectives.¹¹¹ Barry Posen argues that

extended deterrence is a very risky business, and the United States ought to have been glad to shed such commitments after the Cold War ended. Instead, the United States retains extended deterrence commitments in Europe and Asia.... Extended deterrence remains a plausible path to one or more nuclear weapons being used either against U.S. forces or the U.S. homeland.¹¹²

Posen lays out four options for Japan beyond its alliance with the United States. Two are low-probability courses of action: that Japan could find a new nuclear protector or that it could bandwagon with China or other rivals. Echoing some of the strategists explored in this chapter, Posen observes that a third option is for Japan to persist with its nuclear hedge, which he says is tantamount to “ignoring the problem” and which one Diet representative called “closing our eyes and whistling past the graveyard.”¹¹³ The fourth option, nuclear breakout, is the one that has been explored in this chapter in its several possible forms.

Like Israel, which has climbed much higher up the nuclear weapons ladder, Japan has assumed what Vipin Narang labels a “catalytic posture,” one that “relies on an ambiguous nuclear capability aimed at ‘catalyzing’ third-party—often U.S.—military or diplomatic

¹¹⁰ Campbell and Sunohara, “Japan: Thinking the Unthinkable,” 219, 246.

¹¹¹ Michael J. Mazarr, “The Risks of Ignoring Strategic Insolvency,” *Washington Quarterly* 35, no. 4 (2012): 8.

¹¹² Posen, *U.S. Grand Strategy*, 97.

¹¹³ Posen, *U.S. Grand Strategy*, 102; and author’s interview with LDP Diet member., Tokyo, March 27, 2013.

assistance to defend the state by threatening to unsheathe its nuclear weapons.”¹¹⁴ To assume this posture, having assembled nuclear weapons is not even strictly necessary—one simply requires the “ability to assemble a handful of nuclear weapons.” Given the availability of a superpower patron and other constraints on more overt change, this posture may continue to serve Japanese security interests well and is Tokyo’s most likely choice should it opt to follow Israel. Manipulating the threat of breakout remains a mechanism to keep Washington in the game in East Asia.

Still, as this chapter has shown, much remains uncertain in the changing East Asian security environment. North Korea, in particular, is an unpredictable actor and a growing threat to alter Tokyo’s calculus. At present, few voices in the Japanese or U.S. strategic communities openly advocate a Japanese nuclear breakout. But given questions about how the emergence of a multipolar nuclear Asia will complicate national and alliance strategies, the possibility cannot be dismissed. Both communities should be aware that extant constraints on such a dramatic shift can be stretched, that threat perceptions can change, and that a range of once unthinkable alternatives is available.

Richard J. Samuels (PhD, the Massachusetts Institute of Technology) is Ford International Professor of Political Science and Director of the Center for International Studies at the Massachusetts Institute of Technology (MIT). He is also the Founding Director of the MIT Japan Program. In 2005, he was elected a member of the American Academy of Arts and Sciences. Dr. Samuels has served as Head of the MIT Department of Political Science, Vice Chairman of the Committee on Japan of the National Research Council, and Chairman of the Japan-U.S. Friendship Commission. He has spent more than a decade doing field research in Japan and Europe and is one of only three scholars (Japanese or foreign) to have produced more than one scholarly monograph recognized by the Nippon Foundation as among the top “one hundred books for understanding contemporary Japan.” His most recent book is *3.11: Disaster and Change in Japan* (Cornell University Press, 2013). His essays have appeared in *Foreign Affairs*, *The Washington Quarterly*, *Daedalus*, *The National Interest*, and other policy journals.

James L. Schoff is a Senior Associate in the Asia Program at the Carnegie Endowment for International Peace. His research focuses on U.S.-Japan relations and regional engagement, Japanese politics, and alliance management. He previously served as Senior Adviser for East Asia Policy at the U.S. Office of the Secretary of Defense and as Director of Asia-Pacific Studies at the Institute for Foreign Policy Analysis (IFPA). At the Department of Defense, Mr. Schoff was responsible for strategic planning and policy development for relations with Japan and the Republic of Korea. He

¹¹⁴ Vipin Narang, “Posturing for Peace? Pakistan’s Nuclear Postures and South Asian Stability,” *International Security* 34, no. 3 (2009/10): 41.

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also spearheaded bilateral deterrence dialogues and cooperation on regional security issues, including missile defense, disaster relief, and maritime security. From 2003 to 2010, Mr. Schoff directed Asia-Pacific Studies at IFPA in Cambridge, Massachusetts, where he specialized in security and deterrence issues in Northeast Asia, U.S. alliance relations, and nonproliferation measures focused on North Korea. Prior to joining IFPA, he served as a program officer in charge of policy studies at the United States–Japan Foundation in New York. Mr. Schoff’s publications include a chapter on Japan in *Strategy in the Second Nuclear Age; Power, Ambition, and the Ultimate Weapon* (2012), *Realigning Priorities: The U.S.-Japan Alliance & the Future of Extended Deterrence* (2009), and *Tools for Trilateralism: Improving U.S.-Japan-Korea Cooperation to Manage Complex Contingencies* (2005).