



The Evolving Global Landscape of Nuclear Security

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This roundtable examines sources of change in the rapidly evolving global nuclear order. Quantitative expansion combines with qualitative doctrinal changes to challenge traditional deterrence frameworks. Emerging security arrangements such as AUKUS, the Washington Declaration, and expanded NATO–Indo-Pacific ties illustrate evolving alliance strategies, while adversarial cooperation among Russia, China, and North Korea heightens risks of coordinated nuclear coercion. Across democratic and authoritarian systems alike, domestic politics increasingly influence nuclear decision-making, shaping perceptions of credibility, creating proliferation pressures, and dampening arms control prospects. Essays in this collection analyze six regional loci—Europe, Latin America, the Middle East, South Asia, China, and the Korean Peninsula—highlighting two themes: the centrality of domestic political drivers and the cascading effects of nuclear dynamics across interconnected states and regions. Together, this analysis offers a two-level framework for understanding and addressing the complex challenges confronting today's nuclear order.

The past decade has witnessed a rapid and complex transformation in the global nuclear security landscape, driven by both quantitative and qualitative changes in nuclear capabilities, doctrines, and strategic alliances. The expansion of nuclear arsenals, shifts in deterrence strategies, and the increasing entanglement of domestic politics with nuclear decision-making have collectively reshaped the foundations of the nuclear order. China's significant nuclear buildup and North Korea's continued advancement in missile and warhead technology exemplify the quantitative expansion of nuclear capabilities. Meanwhile, evolving doctrines—such as India's and Pakistan's shifting nuclear postures and Russia's persistent nuclear threats in the context of the Ukraine conflict—illustrate qualitative changes that challenge long-standing assumptions about strategic stability.

Traditional extended deterrence dynamics are being redefined. The Trump administration's antipathy toward alliance commitments, coupled with a broader shift in US global engagement, have raised concerns about the credibility of American security guarantees across the world. While these developments have the potential to unravel long-standing ties, several nascent relationships centered on deterrence are emerging to face the next nuclear challenges. The AUKUS pact, initially involving Australia, the United Kingdom, and the

United States, and now incorporating France, signals an evolving security framework in the Indo-Pacific. Similarly, the Washington Declaration between the United States and South Korea and the formation of a US–Japan–South Korea Trilateral Secretariat reflect growing efforts to reinforce deterrence against North Korea, while NATO's increased coordination with Indo-Pacific partners suggests an expanding strategic footprint and common recognition of China as a threat. The durability and effectiveness of these arrangements, however, remain uncertain as global nuclear competition intensifies.

Adversarial nuclear cooperation has also become a defining feature of this emerging nuclear era. The strategic alignment of Russia, China, and North Korea—evidenced by military coordination, arms transfers, and political signaling—raises concerns about the possibility of simultaneous regional crises or coordinated nuclear coercion. Whether through explicit collaboration or parallel actions, these states' nuclear strategies increasingly challenge the US-led security architecture.

This evolving multipolar nuclear environment underscores the need for a reassessment of existing deterrence frameworks and strategies. In this issue of the *Texas National Security Review*, we offer a collection of essays that reflects on the ongoing political and strategic changes in these increasingly interconnected nuclear environments.

Beyond broader geopolitical shifts, domestic political factors are playing an increasingly prominent role in shaping nuclear policy. In democratic societies, public opinion and political polarization can both shape the nuclear future. Divided discourse in the United States on arms control with Iran or extended deterrence to Europe show how US credibility can be undercut by domestic politics. In South Korea, Poland, and elsewhere, tenacious public support for nuclear proliferation and nuclear sharing have already begun to raise questions about these countries' nuclear futures. Meanwhile, in Sweden and Finland, domestic debates between nuclear deterrence and disarmament played a role in these states' recent accession to NATO.

Authoritarian states also factor domestic drivers into their nuclear decision-making. In China, the centralization of power under Xi Jinping has led to a nuclear policy increasingly shaped by internal political priorities, raising questions about future arms control prospects. In Russia, Vladimir Putin's historical revisionism shows the importance of understanding the individuals with authority over nuclear arsenals—and the role of the bureaucracies that stand between them. Meanwhile, Kim Jong Un has revised North Korea's nuclear doctrine to further protect against decapitation strikes and has officially rejected the idea of Korean unification. The essays in this collection each probe and shed light on the domestic determinants of the ongoing evolution in global nuclear order.

Informed by a conference hosted by the Phelan United States Centre at the London School of Economics and Political Science in June 2024, each essay in this collection examines the evolving nuclear security environment in one of six central loci: Europe, Latin America, the Middle East, South Asia, China, and the Korean Peninsula. The authors' viewpoints are diverse, providing an expansive and inclusive look at global nuclear policy and exploring how different countries and regions are tackling major new developments in nuclear security. The result is a geographically expansive but cohesive review of the global nuclear order.

The essays also highlight important implications for policy. In particular, each essay offers insights into the complex political dynamics between the United States and various nuclear stakeholders—be they treaty allies, partners, or adversaries of the United States.

Collectively, the essays point to two major themes shaping nuclear policy today. First, domestic politics remains an understudied, but critical, driver of nuclear policy. For example, Do Young Lee demonstrates that—despite the initial success of the Washington Declaration—the South Korean public's confidence in the credibility of US extended deterrence has declined, and attributes this decline to diverging US and South Korean interpretations of North Korea's evolving nuclear strategy. This divergence has gen-

erated major disagreements between Washington and Seoul about both the threat environment and the appropriate strategies to address it.

In their discussion of the Middle East, Nicole Grajewski and Jane Darby Menton similarly point to the powerful role of Iranian domestic politics. The recent attacks on Iran's nuclear program by Israel and the United States have dramatically heightened Tehran's sense of vulnerability, reducing political barriers to nuclear proliferation that have previously served as valuable guardrails.

Domestic politics also lie at the heart of China's ongoing vertical proliferation, as Nicola Leveringhaus demonstrates that strategic and internal political rationales combine to explain Xi Jinping's nuclear decision-making. Centralization of decision-making in foreign and security policy issues has elevated the status of nuclear weapons and contracted the domestic community of nuclear strategists while also diminishing their influence on nuclear decision-making. This "more CCP-aligned, paranoid, younger, and strategically less informed Chinese expert community" may have adverse implications for arms control.

Domestic politics also affect coordination between allies and partners in the nuclear realm. Jacklyn Majnemer evaluates tensions between the United States and its allies over NATO's nuclear future, arguing that effective deterrence requires satisfying the political concerns of nuclear sharing states. As the Trump administration's talk and actions perpetuate a rift between the United States and its European allies, squaring US interests with the demands of European nuclear deterrence is likely to become more challenging.

A second theme that emerges from these essays is the way in which the globally interconnected nature of nuclear politics can lead to cascading effects on nuclear policy and strategy. Leveringhaus suggests that expanded security cooperation between Russia and China in the conventional realm could prompt a deepening nuclear relationship, better positioning Beijing to manage its diversifying strategic deterrent. She further argues that China's nuclear buildup is driven by perceived vulnerability to quantitative improvements in the US arsenal, including ballistic missile defense and conventional counterforce capabilities. This situation raises important questions for policymakers on how their actions could either slow or accelerate an interactive cycle.

Many of the roundtable contributions point to second-order effects of US-China competition on the global nuclear landscape. Debak Das, for example, argues that US-China competition and the AUKUS deal have contributed to major new developments in India's nuclear posture. In what he calls "a cascade

effect of reactionary vertical proliferation,” US-China competition fuels a Chinese nuclear buildup that prompts efforts in India to shore up second-strike capabilities. This chain of events in turn exacerbates the India-Pakistan security dilemma, making recurring South Asian military crises more dangerous and more difficult for US policy to manage. Lee explains the complex effects of China’s nuclear buildup on both US and South Korean military policy. While Washington is increasingly prioritizing deterring China, Seoul remains wary of pushing away its biggest trade partner and fears becoming entrapped in a US-China conflict. J. Luis Rodriguez argues that Latin America reacts to competition between the United States, Russia, and China, noting in particular that the United States has viewed cooperation on nuclear energy and space technology between China and several Latin American countries as a potential security threat. Finally, Grajewski and Menton discuss how US-China competition affects the nuclear energy market—and shapes resulting proliferation risks—among multiple states in the Middle East, producing developments that can draw the US into regional conflicts. These essays emphasize the need for more scholarly and policy attention to the downstream effects of US-China nuclear competition on second-order dynamics that shape the nuclear environment in important ways.

Together, these essays identify significant challenges to the contemporary nuclear order. They present a two-level framework for understanding the domestic and international drivers of ongoing evolutions in nuclear security. Restoring balance to the nuclear order will require efforts on multiple fronts. First, to maintain strategic cohesion, the United States and its allies should be attentive not just to international considerations, but also to domestic political questions and perceptions at the heart of nuclear decision-making. Second, where possible, the United States may benefit from engaging domestic actors in adversarial systems to promote shared understandings of the global risks of nuclear proliferation and of more assertive nuclear postures. Third, these essays demonstrate that nuclear decisions cannot be made in bilateral or regional vacuums. Thinking about the global nuclear order as an interconnected whole and

mapping out the downstream risks of decisions will enable policymakers in the US and elsewhere to better appreciate the cascades and feedback effects that might undermine their policies in the future. ●

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Image: *Missile Gallery* [Image 9 of 9], by Tyler Greenlees¹

1 For the image, see <https://www.dvidshub.net/image/7642581/missile-gallery>.

Growing Divergence: North Korea's Evolving Nuclear Strategy and the US–South Korea Alliance

Do Young Lee

In response to North Korea's escalating nuclear and missile threats, the US and South Korea have taken measures to reinforce extended deterrence: the Washington Declaration, the Nuclear Consultative Group, and the enhanced visibility of US strategic assets around the Korean Peninsula. Despite these steps, South Korea's public confidence in US extended deterrence commitments has declined. This article argues that this decline is rooted in growing divergence between US and South Korean interpretations of North Korea's evolving nuclear strategy and the appropriate responses to it.

On April 26, 2023, US President Joe Biden and South Korean President Yoon Suk Yeol held a summit and adopted the Washington Declaration.¹ The declaration was designed to reassure South Koreans that the US extended deterrence commitment to South Korea remains steadfast in the face of North Korea's growing nuclear and missile threats. Washington adopted the declaration in the hope of curbing South Korean support for nuclear armament and encouraging Seoul to faithfully comply with the Nuclear Non-Proliferation Treaty. The declaration outlines specific measures, including the establishment of the Nuclear Consultative Group (NCG) and the regular deployment of US strategic assets—such as nuclear-powered ballistic

missile submarines (SSBNs)—to the Korean Peninsula. As part of the implementation of the Washington Declaration, the USS *Kentucky* made a historic port call to South Korea in July 2023, marking the first visit to South Korea in forty-two years by a US SSBN.²

Despite these measures, public opinion polls conducted by three South Korean research institutions following the Washington Declaration revealed results that deviated from US expectations.³ In 2024, South Korean respondents' support in these polls for indigenous nuclear weapons stood at 72.8 percent,⁴ 66.0 percent,⁵ and 70.9 percent,⁶ marking decreases of 3.8 percent, 5.8 percent, and 4.2 percent, respectively, from 2023. On average, 69.9 percent of South Koreans favored acquiring nuclear weapons, a 2.1

1 White House, "Washington Declaration," April 26, 2023, <https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2023/04/26/washington-declaration-2/>.

2 Shin Ji-hye and Ji Da-gyum, "Yoon Touts Solidarity on US Sub," *Korea Herald*, July 19, 2023, <https://www.koreaherald.com/view.php?ud=20230719000755>.

3 Victor D. Cha, "Eyes Wide Open: Strategic Elite Views of South Korea's Nuclear Options," *Washington Quarterly* 47, no. 2 (2024): 23–40; Tongfi Kim and Do Young Lee, "Continuity and Changes: The Effects of Russia's War Against Ukraine on Japanese and South Korean Nuclear-Weapons Discourse," *The Nonproliferation Review* 30, nos. 4–6 (2023): 265–84.

4 "제2차 '북핵 위기와 안보상황 인식' 갤럽 여론조사 결과 공개" ["Release of Results from the Second Gallup Poll on 'Perceptions of North Korean Nuclear Crisis and Security Situation'"], Chey Institute for Advanced Studies, February 6, 2024, <https://www.chey.org/Kor/Notice/NoticeView.aspx?seq=236>.

5 Sang Sin Lee, Tae-eun Min, Juhwa, Park, Moo Chul Lee, Kwang-il Yoon, Bon-sang Koo, Antonio Fiori, and Marco Milani, *KINU 통일의식조사 2024: 북한의 적대적 2국가론과 한국의 핵보유 여론* [*The KINU Unification Survey 2024: North Korea's Two Hostile States Doctrine and South Korea's Public Opinion on Nuclear Armament*] (Korea Institute for National Unification, 2024), 246–47, https://www.kinu.or.kr/main/module/report/view.do?idx=128256&category=44&nav_code=mai1674786094.

6 "South Koreans and Their Neighbors 2024," Asan Institute for Policy Studies, Public Opinion Surveys, May 16, 2024, https://asaninst.org/bbs/board.php?bo_table=s1_6_1_eng&wr_id=23&page=1.

percent rise from the previous year. Although the Washington Declaration and the implementation of follow-up measures have been widely promoted, support for South Korean nuclear armament has continued to increase.⁷

Confidence in the US security guarantee appears to be related to these shifts in public opinion. One of the three polls showed that the percentage of South Koreans who believe Washington would use nuclear weapons to defend their country, even if North Korea could strike the US mainland, dropped from 51.3 percent in 2023 to 39.3 percent in 2024.⁸ In another time-series poll conducted since 2021, when respondents were asked to choose between hosting US troops and possessing their own nuclear weapons for national defense, more respondents selected the second option (possessing nuclear weapons) than the first option (hosting US troops) for the first time in 2024.⁹ This marked decline in public confidence occurred *after* the Washington Declaration was adopted.

What accounts for the recent decline in South Korean confidence in US extended deterrence? Addressing this question requires careful analysis of significant shifts in North Korea's nuclear strategy and doctrine over the past few years. The increasing distrust from South Korean respondents stems from a widening gap between US and South Korean views on North Korea's evolving nuclear strategy and appropriate countermeasures. Pyongyang appears to have recently made a significant shift in its nuclear strategy, aimed at countering the conventionally superior South Korean and US combined forces stationed on the Korean Peninsula.¹⁰ Consequently, North Korea is currently assessed to have adopted a more aggressive nuclear posture on the Korean Peninsula, one that envisions preemptive nuclear use far more actively than in the past.¹¹ While Washington maintains that its existing extended deterrence commitment is sufficient, South

Koreans posit that the US has not adapted to these changes, raising doubts about America's resolve and capability to address the evolving North Korean threat.

Evolution in North Korea's Nuclear Strategy

Under Vipin Narang's famous classification of nuclear strategies (or nuclear postures), a catalytic strategy seeks to catalyze military or diplomatic intervention—typically from a third party—when the state's vital interests are threatened by an external adversary.¹² Applying this typology to North Korea, Narang explained that Pyongyang initially adopted a catalytic strategy.¹³ That is, North Korea aimed to employ its nuclear weapons to prompt intervention from its patron, China, or to induce Beijing to act as a crisis mediator during conflicts on the Korean Peninsula. Additionally, Narang predicted that if China were no longer perceived as a reliable patron, North Korea—facing the conventionally superior US–South Korea combined forces—would likely shift to an asymmetric escalation strategy.¹⁴ Indeed, over the past few years, North Korea's nuclear strategy appears to have evolved into asymmetric escalation, incorporating its core characteristics.¹⁵

Asymmetric escalation is designed to deter conventional attacks by enabling a state to quickly escalate to the first use of nuclear weapons against the adversary.¹⁶ An asymmetric escalation posture has three key features: (1) the threat of first use of nuclear weapons; (2) explicit intention to employ nuclear weapons tactically against an adversary's conventional forces and the delivery platforms to achieve this; and (3) pre-delegation of authority to military commanders for nuclear weapon use.¹⁷

North Korea's stance on a “no first use” (NFU) policy has shifted significantly. Previously, Pyongyang consistently portrayed its nuclear forces as defen-

7 It is worth noting, however, this support—while initially appearing strong—was in fact “soft.” One of the three surveys found that South Korean respondents' support for an indigenous nuclear armament dropped substantially—by 15.9 to 21 percentage points—when they were primed to consider various potential costs, such as the abrogation of the US–ROK alliance or international economic sanctions. Lee et al., *The KINU Unification Survey 2024*, 248–53.

8 “제2차 ‘북핵 위기’와 안보상황 인식’ 갤럽 여론조사 결과 공개.”

9 Lee et al., *The KINU Unification Survey 2024*.

10 Nicholas D. Anderson and Daryl G. Press, “Lost Seoul? Assessing Pyongyang's Other Deterrent,” *Texas National Security Review* 8, no. 3 (2025): 9–27.

11 Wook-Sik Cheong, “The DPRK's Changed Nuclear Doctrine: Factors and Implications,” *Journal for Peace and Nuclear Disarmament* 6, no. 1 (2023): 136–47.

12 Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton University Press, 2014), 15–17.

13 Narang, *Nuclear Strategy in the Modern Era*, 305. For a summary of Narang's typology of nuclear strategies, see page 22. See also Vipin Narang, “Nuclear Strategies of Emerging Nuclear Powers: North Korea and Iran,” *Washington Quarterly* 38, no. 1 (2015): 73–91. For a different view of North Korea's initial nuclear strategy, see Dong Sun Lee and Iordanka Alexandrova, “North Korean Nuclear Strategy: Envisioning Assured Retaliation,” *International Relations of the Asia-Pacific* 21, no. 3 (2021): 371–400.

14 Narang, *Nuclear Strategy in the Modern Era*, 305.

15 For an alternative perspective on North Korea's evolving nuclear strategy, see Hyun-Binn Cho and Ariel Petrovics, “North Korea's Strategically Ambiguous Nuclear Posture,” *Washington Quarterly* 45, no. 2 (2022): 39–58.

16 Narang, *Nuclear Strategy in the Modern Era*, 19.

17 Narang, *Nuclear Strategy in the Modern Era*, 19–21.

sive. For example, the 2013 North Korea nuclear law describes its nuclear weapons as “just means for defense” to cope with the US’s increasingly hostile policy and nuclear threat.¹⁸ The nuclear law also states that the primary role of these weapons is to deter and repel enemy aggression and attacks on the state.¹⁹ Additionally, it clarifies that Pyongyang would neither use nor threaten to use nuclear weapons first against nonnuclear states like South Korea unless they participate with a hostile nuclear power like the US in acts of aggression and attack against North Korea.²⁰ In September 2022, however, North Korea enacted a new law that significantly pivoted away from its original NFU-oriented stance. Under the section titled “Conditions of Using Nuclear Weapons,” the new law stipulated five circumstances under which nuclear weapons could be used: “1) in case an attack by nuclear weapons or other weapons of mass destruction was launched or drew near is judged, 2) in case a nuclear or non-nuclear attack by hostile forces on the state leadership and the command organization of the state’s nuclear forces was launched or drew near is judged, 3) in case a fatal military attack against important strategic objects of the state was launched or drew near is judged, 4) in case the need for operation for preventing the expansion and protraction of a war and taking the initiative in the war in contingency is inevitably raised, 5) in other case an inevitable situation in which it is compelled to correspond with catastrophic crisis to the existence of the state and safety of the people by only nuclear weapons is created.”²¹

Notably, the law allows North Korea to use nuclear weapons first if an external attack on the state “drew near is judged”—that is, is deemed imminent—or dur-

ing wartime to prevent further escalation and secure victory. The circumstances it describes are so broad that they could allow Pyongyang to resort to preemptive nuclear attacks at virtually any time, based on arbitrary judgments that will not be transparent to external observers and actors trying to deter North Korea.²²

Illustrating the second characteristic of an asymmetric escalation strategy, in 2021 Kim publicly acknowledged for the first time that North Korea was developing tactical nuclear weapons and declared that “producing smaller and lighter nuclear weapons for tactical uses” would be one of several key strategic goals in his country’s five-year military development plan (2021–25) for a nuclear weapons program.²³ The following year, North Korea began efforts to operationalize tactical nuclear weapons for actual war-fighting missions. In September 2022, Kim ordered the expansion of the operational roles of tactical nuclear weapons and the acceleration of their deployment.²⁴ In late December 2022, the North Korean leader directed that “[n]ow that the South Korean puppet forces who designated the DPRK as their ‘principal enemy’ and openly trumpet about ‘preparations for war’ have assumed our undoubted enemy, it highlights the importance and necessity of a mass-producing of tactical nuclear weapons and calls for an exponential increase of the country’s nuclear arsenal.”²⁵ In 2023, Pyongyang unveiled its tactical nuclear warhead and a range of tactical nuclear platforms designed to target South Korea.²⁶ Since 2022, North Korea has significantly increased the number of test-firings of short-range ballistic and cruise missiles that exclusively target South Korea.²⁷ North Korea has clearly signaled its intention and ability to carry out aggressive tactical

18 “Law on Consolidating Position of Nuclear Weapons State Adopted,” KCNA Watch, April 1, 2013, <https://kcnawatch.org/newstream/1451896124-739013370/law-on-consolidating-position-of-nuclear-weapons-state-adopted/>.

19 “Law on Consolidating Position of Nuclear Weapons State Adopted.”

20 “Law on Consolidating Position of Nuclear Weapons State Adopted.”

21 “Law on DPRK’s Policy on Nuclear Forces Promulgated,” KCNA Watch, September 9, 2022, <https://kcnawatch.org/newstream/1662687258-950776986/law-on-dprks-policy-on-nuclear-forces-promulgated/>.

22 Ildo Hwang, “DPRK’s Law on the Nuclear Forces Policy: Mission and Command & Control,” IFANS Focus, October 12, 2022, <https://www.ifans.go.kr/knda/ifans/eng/pblct/PblctView.do?csrfPreventionSalt=null&pblctDtaSn=14058&menuCl=P11&clCode=P11&koreanEngSe=ENG>.

23 Bomi Kim, *North Korea’s New Weapon Systems: The Development of Tactical Nuclear Weapons and Its Implications* (Institute for National Security Strategy, 2022); Hans M. Kristensen, Matt Korda, Eliana Johns, and Mackenzie Knight, “North Korean Nuclear Weapons, 2024,” *Bulletin of the Atomic Scientists*, July 15, 2024, <https://thebulletin.org/premium/2024-07/north-korean-nuclear-weapons-2024/>.

24 Kim Tong-hyung, “N. Korea Says It Will Never Give Up Nukes to Counter US,” Associated Press, September 9, 2022, <https://apnews.com/article/asia-united-states-south-korea-nuclear-weapons-north-acad3f4abf01c88a2dd8be02860d8c8e>.

25 “Report on 6th Enlarged Plenary Meeting of 8th WPK Central Committee,” KCNA Watch, January 1, 2023, <https://kcnawatch.org/newstream/1672543894-200963704/report-on-6th-enlarged-plenary-meeting-of-8th-wpk-central-committee/>.

26 Ji Da-gyum, “N. Korea Unveils First ‘Tactical Nuclear Attack Submarine,’” *Korea Herald*, September 8, 2023, <http://koreaherald.com/view.php?ud=20230908000504>; Nam Hyun-woo, “North Korea Unveils Tactical Nuclear Warheads,” *Korea Times*, March 28, 2023, https://www.koreatimes.co.kr/www/nation/2024/08/103_347994.html.

27 Missile Defense Project, “Missiles of North Korea,” *Missile Threat*, Center for Strategic and International Studies, June 14, 2018, <https://missilethreat.csis.org/country/dprk/>; Wook Yang, “2023년 북한 핵개발 현황 및 평가: 국방력 강화 속에 지속될 2024년 도발 [2023 North Korea’s Nuclear Development Status and Assessment: Ongoing Provocations Expected in 2024 amid Bolstered Defense],” Asan Institute for Policy Studies, Issue Brief, December 28, 2023, https://asaninst.org/bbs/board.php?bo_table=s1_1&wr_id=429&sf=wr_subject%7C%7Cwr_content&stx=Nuclear&sop=and&page=1.

nuclear operations against South Korea, if necessary, using these short-range systems.²⁸

The recent evolution of North Korea's nuclear strategy also clearly reflects the third characteristic of an asymmetric escalation strategy. In recent years, Pyongyang transitioned from its original assertive nuclear command and control (NC2) system, wherein Kim held all centralized power, to a more delegative system. Specifically, North Korea's 2013 nuclear law specified that the state's nuclear weapons "can be used only by a final order of the Supreme Commander [Kim Jong Un]."²⁹ In contrast, Pyongyang's new delegative system seems to be intended to ensure nuclear retaliation against a surprise attack on the North Korean leadership. Notably, the 2022 law stipulates under the newly added section of "command and control of nuclear forces" that "the state nuclear forces command organization" shall assist the North Korean leader in "the whole course from decision concerning nuclear weapons to execution."³⁰ The section also stipulates that if Kim's NC2 is incapacitated due to an enemy attack, "a nuclear strike shall be launched automatically and immediately . . . according to the operation plan decided in advance."³¹ The core of this reform is to transfer pre-authorized control of the nuclear button to designated individuals.³²

Pinpointing the origins of this evolution is beyond this study's scope, but a few plausible explanations emerge. First, as Narang's theory suggests, a weak-

ening of North Korea's trust in China as its security patron may be a contributing factor. The strained relationship between the two communist allies in recent years lends plausibility to this explanation.³³ Second, South Korea's domestic politics may have played a role. The conservative Yoon administration, which took office in May 2022, adopted a more hard-line stance toward North Korea than its predecessor, the Moon Jae-in administration.³⁴ Notably, Pyongyang enacted its 2022 nuclear law just four months after Yoon's inauguration. Third, South Korea's military modernization has significantly weakened the effectiveness of North Korean conventional artillery attacks, shifting the conventional balance of power in favor of the South.³⁵ This shift may have prompted Pyongyang to adjust its nuclear strategy, utilizing its nuclear forces more actively for political and military purposes within the Korean theater. Fourth, lessons drawn from Russia's threat of nuclear first use in the Ukraine war might have driven North Korea's shift.³⁶

The Growing Cacophony

North Korea's evolving nuclear strategy has created a rift between Seoul and Washington in their threat perceptions and their approaches to the evolving North Korean threat. Table 1 examines differences in South Korean and US perceptions of five issues. The allies agree on only two issues.

Table 1. Summary of South Korean and US perspectives on North Korea's evolving nuclear strategy and appropriate responses.

	The likelihood of North Korean nuclear first use	The likelihood of North Korean localized provocations	The likelihood of a North Korean full-scale invasion	The need to significantly enhance the specificity of US commitments	The need for additional US military presence in South Korea
South Korea	Increased	Increased	Increased	Needed	Needed
The US	Increased	Increased	Not increased	Not needed	Not needed

Note: The values in this summary table represent an overall average perspective that includes both public and elite perceptions from the two states. The terms "increased" and "not increased" use 2021 as a reference point, when North Korea's nuclear strategy began to evolve in earnest.

28 Miachel Lee, "North's Kim Threatens to Destroy Seoul During Multiple Rocket Launch Drill," *Korea Joongang Daily*, March 19, 2024, <https://koreajoongangdaily.joins.com/news/2024-03-19/national/northKorea/Norths-Kim-threatens-to-destroy-Seoul-during-multiple-rocket-launch-drill/2005880>.

29 "Law on Consolidating Position of Nuclear Weapons State Adopted."

30 "Law on DPRK's Policy on Nuclear Forces Promulgated," KCNA Watch, September 9, 2022, <https://kcnawatch.org/newstream/1662687258-950776986/law-on-dprks-policy-on-nuclear-forces-promulgated/>.

31 "Law on DPRK's Policy on Nuclear Forces Promulgated."

32 Megan DuBois, "North Korea's Nuclear Fail-Safe," *Foreign Policy*, September 16, 2022, <https://foreignpolicy.com/2022/09/16/north-korea-nuclear-weapons-law-kim-jong-un/>.

33 Ji Da-gyum, "China, N. Korea Mark 75th Anniversary of Ties with Little Fanfare," *Korea Herald*, October 7, 2024, <https://www.koreaherald.com/article/3488374>; Hyung-jin Kim, "North Korea and China Mark Their 75th Anniversary of Ties as Outsiders Question Their Relationship," Associated Press, October 6, 2024, <https://apnews.com/article/north-korea-kim-china-xi-f2b1aebf0016cc32fb40600802540a21>.

34 Kang Seung-woo, "Does US Support Yoon's Hawkish Stance on North Korea?," May 14, 2022, *Korea Times*, https://www.koreatimes.co.kr/www/nation/2025/03/103_329107.html.

35 Anderson and Press, "Lost Seoul?"

36 Kim and Lee, "Continuity and Changes."

South Korea

South Korean leaders and experts across the political spectrum have grown deeply concerned about Pyongyang's nuclear evolution toward a more offensive and aggressive posture. In particular, they are highly sensitive to North Korea lowering the threshold for nuclear use in various scenarios, believing that the likelihood of North Korea's nuclear use—ranging from peacetime to crisis and wartime—has significantly increased.³⁷ In January 2024, President Yoon criticized Pyongyang, stating, "The North Korean regime is an irrational group that has legalized the preemptive use of nuclear weapons as the only country in the world to do so."³⁸ In December 2022, Wi Sung-lac (now the first National Security Advisor under the new Lee Jae Myung administration) assessed that North Korea was extremely escalating its threat to South Korea through test-firings of various types of nuclear missiles.³⁹

South Koreans are concerned that as North Korea's nuclear strategy grows more aggressive, Pyongyang may be more inclined to undertake military actions on the Korean Peninsula, such as localized provocations or even large-scale invasions. In other words, with North Korea now possessing a more offensive nuclear doctrine and a range of supporting tactical nuclear weapons, Pyongyang could become more emboldened to use military options. Former South Korean Vice Minister of National Defense Baek Seung-joo warned that North Korea, having gained confidence from the legalization of nuclear weapons, might be preparing for localized provocations similar to the shelling of Yeonpyeong Island in 2010.⁴⁰ South Korean experts have also frequently examined a scenario in which North Korea rapidly occupies disputed islands in the Yellow Sea. These experts warn that North Korea could coerce South Korea into recognizing

these already lost islands as a *fait accompli*, either by threatening a limited nuclear attack or launching an actual "escalate to de-escalate" nuclear attack.⁴¹

Moreover, influential South Koreans warn that North Korea's new nuclear law could signal the prelude to full-scale war. In January 2024, Kim Jong Un ordered a constitutional revision to specify "the issue of completely occupying, subjugating and reclaiming South Korea and annexing it as a part of the territory of our republic in case a war breaks out on the Korean Peninsula."⁴² In light of this development, a South Korean expert argued that the new nuclear law reflects a dangerous ambition of "forceful absorption and unification through nuclear means," adding that "North Korea has never abandoned its goal of unification."⁴³ President Yoon stated, "North Korea has enacted a new nuclear law for first nuclear use to reunify [the Korean Peninsula] under communism."⁴⁴ Then-opposition party leader Lee Jae Myung, stated a few days after North Korea's new nuclear law was released: "I think this is a shocking and serious situation, because it appears North Korea has revealed its intention to use nuclear weapons not just for defense, but even for a preemptive attack."⁴⁵

Seoul believes that to effectively counter North Korea's evolving threats, Washington must significantly enhance the specificity of its extended deterrence commitments to South Korea. For example, South Korea wants the US to more concretely outline in advance how it would respond to North Korean aggression under specific scenarios. The information requested by South Korea includes the specific types of nuclear assets to be deployed, the locations of these assets, and the operational processes to be employed.⁴⁶ The rationale is this: Seoul believes that if the US were to explicitly and concretely detail its

37 Choe Sang-Hun, "North Korea Adopts New Law Hardening Its Nuclear Doctrine," *The New York Times*, September 9, 2022, <https://www.nytimes.com/2022/09/09/world/asia/north-korea-kim-weapons-law.html>; Hwang, "DPRK's Law on the Nuclear Forces Policy."

38 Lee Haye-ah, "Yoon Says 'Irrational' N. K. Likely to Carry Out Provocations Ahead of April Elections," *Yonhap News*, January 31, 2024, <https://en.yna.co.kr/view/AEN20240131006600315>.

39 "[JoongAng Ilbo—CSIS Forum 2022] The Alliance in Turbulent Times," December 1, 2022, <https://www.youtube.com/watch?v=xZnY8ThwC4Q>.

40 Eunhye Lee, "백승주 '北, 핵무기 사용 법제화 이후 자신감, 다른 국지도발 준비 가능성,' [Baek Seung-joo: North Korea's Increased Confidence After Nuclear Legalization May Signal New Local Provocations]," *Joseilbo*, November 4, 2022, <https://www.joseilbo.com/news/htmls/2022/11/20221104470289.html>.

41 Yonghwan Choi, "Issues and Response Tasks of North Korea's Nuclear Strategy," *Institute for National Security Strategy*, June 2024, <https://www.inss.re.kr/upload/bbs/BBSA05/202406/F20240612171857969.pdf>; Jieun Lee, "北 커지는 핵위협...어떤 '핵전술 시나리오' 있을까 [North Korea's Growing Nuclear Threat: What 'Nuclear Warfare Scenarios' Exist]," *Asia Business Daily*, March 21, 2023, <https://www.asiae.co.kr/article/2023032016494322326>.

42 Choe Sang-Hun, "North Korea Says It Is No Longer Interested in Reunifying with the South," *The New York Times*, January 16, 2024, <https://www.nytimes.com/2024/01/16/world/asia/north-korea-reunification-policy.html>.

43 Moon-jung Cho, "전문가 김정은, '영토완정' 으로 적화통일 의지 표명 [Kim Jong Un Expresses Intent for Unification Under Communism Through 'Territorial Integrity,' Experts Say]," *New Daily*, January 22, 2024, <https://www.newdaily.co.kr/site/data/html/2024/01/22/2024012200319.html#>.

44 Hansol Woo, "윤 대통령 '북, 대남 적화통일 위해 핵 법제화...확고한 국가관·대적관 필요 [President Yoon, North Korea Enacts a Nuclear Law for Reunification Under Communism]," *KBS*, November 6, 2023, <https://news.kbs.co.kr/news/pc/view/view.do?ncd=7810921>.

45 Cho Sung-ho, "이재명 '北, 평화 위협 유감...모든 도발 중단해야' [Lee Jae-myung: 'Regret over North Korea's Threat to Peace... All Provocations Must Stop]," *YTN*, September 14, 2022, https://www.ytn.co.kr/_ln/0101_202209141112329864.

46 Peter K. Lee and Kang Chungku, "Comparing Allied Public Confidence in US Extended Nuclear Deterrence," *Asian Institute for Policy Studies*, Issue Brief, March 27, 2024, https://asaninst.org/data/file/s3_4_2_eng/f15af67c43af11afd7a990dc4f32fd2b_3XRlFPZN_6b75e0dd44fbca8899de7b11c972d96787d5406.pdf.

nuclear commitments and publicly announce their establishment—while keeping implementation details confidential—Pyongyang would be more likely to trust that US retaliatory actions would be carried out as specified, and would thus be deterred from launching nuclear or conventional attacks against South Korea. Stated differently, Seoul perceives American ambiguity as weakening the credibility and effectiveness of extended deterrence. Some South Korean experts contend that the US should formally codify that if North Korea launches a nuclear strike against South Korea, Washington will automatically intervene and immediately retaliate with nuclear strikes.⁴⁷

The Yoon administration sought to address the lack of concreteness in US extended deterrence by enhancing the viability of US nuclear commitments and specifying implementation plans.⁴⁸ Seoul's efforts bore fruit with several tangible results, including the endorsement of the Washington Declaration, the establishment of the NCG, the convening of multiple subsequent NCG meetings, the advancement of the alliance's conventional-nuclear integration (CNI) initiative, and the adoption of the US-ROK Guidelines for Nuclear Deterrence and Nuclear Operations.⁴⁹ However, many South Korean elites and citizens remain dissatisfied and continue to demand groundbreaking measures, including the redeployment of nonstrategic nuclear weapons to South Korea, the introduction of a NATO-style nuclear sharing arrangement, and the addition of a “nuclear attack protection clause” to the US-ROK alliance treaty.⁵⁰

Finally, Seoul believes that North Korea now poses a fundamentally different type of threat, and stresses the need to maintain the current strength and role of the United States Forces Korea (USFK) to deter

it. Most South Koreans view the existing US military presence as the basic, minimum requirement for effective extended deterrence. Some argue that more American deterrent assets should be dedicated to South Korea's defense, including the redeployment of tactical nuclear weapons to South Korea and the permanent or semipermanent stationing of US strategic assets on South Korean soil.⁵¹

South Korean leaders also advocate limiting the USFK's role to defending South Korea from North Korean incursions, fearing that expanding it beyond the Peninsula could undermine US extended deterrence. For example, when asked if South Korea would assist a US defense of Taiwan during a Chinese attack, President Yoon stated that such a scenario would likely provoke North Korea's opportunism. He emphasized that the primary focus of the South Korea–US alliance should be maintaining a strong defense posture against North Korea.⁵² This stance reflects South Korea's long-standing view of North Korea as a more immediate threat than China. South Korea's position that USFK should concentrate exclusively on deterring North Korea also reflects its concern that it could be drawn into unwanted military conflicts beyond the Peninsula. Specifically, apprehension is growing among South Korean experts that if USFK engages in a military confrontation with China in the Taiwan Strait, then South Korea might also be pulled into the conflict.⁵³ Some might argue that the so-called division-of-labor approach—where South Korea takes the lead in deterring North Korea on the Peninsula while USFK reorients toward other regional contingencies—which the Trump administration is said to be pursuing, would shield South Korea from the risk of entrapment.⁵⁴ South Korean

47 Dohyung Han, “한국 전문가들 '북 핵공격시 미 자동개입 의무 명문화해야' [South Korean Experts, 'US Obligation for Automatic Intervention Should Be Codified in Case of North Korean Nuclear Attack'],” *Radio Free Asia*, September 16, 2022, https://www.rfa.org/korean/in_focus/nk_nuclear_talks/nuclearnk-09162022084039.html.

48 Kang Seung-woo, “Interview: Extended Deterrence Is Best Option to Ensure Peace on Korean Peninsula,” *Korea Times*, February 2, 2023, https://www.koreatimes.co.kr/www/nation/2024/12/113_344713.html.

49 The White House, “Washington Declaration,” April 26, 2023, <https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2023/04/26/washington-declaration-2>; The White House, “Joint Statement by President Joseph R. Biden of the United States of America and President Yoon Suk Yeol of the Republic of Korea on US-ROK Guidelines for Nuclear Deterrence and Nuclear Operations on the Korean Peninsula,” July 11, 2024, <https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2024/07/11/joint-statement-by-president-joseph-r-biden-of-the-united-states-of-america-and-president-yoon-suk-yeol-of-the-republic-of-korea-on-u-s-rok-guidelines-for-nuclear-deterrence-and-nuclear-operations-o/>.

50 Lee and Kang, “Comparing Allied Public Confidence in US Extended Nuclear Deterrence”; Yi Wonju, “PPP Candidate Vows to Develop Nuclear-Powered Submarines to Cope with N. Korea's Nuke Threat,” *Yonhap News*, May 9, 2025, <https://en.yna.co.kr/view/AEN20250509005000315>.

51 “한국판 MAD와 전술핵 재배치의 필요성 [The Korean Version of MAD and the Need to Redeploy Tactical Nuclear Weapons],” Asan Institute for Policy Studies, Issue Brief, August 4, 2023, https://www.asaninst.org/data/file/s1_1/f15af67c43af11afd7a990dc4f32fd2b_jfBbcEHO_ada1c013471aa37e8c7ad8c7ab9fcfd0778fab7f.pdf; Kim Hyun-wook, “신정부의 한미동맹 발전 방향 [The New Administration's Direction for Enhancing the ROK-US Alliance],” Institute of Foreign Affairs and National Security, May 10, 2022, <https://www.ifans.go.kr/knda/hmpg/mob/pblct/PblctView.do?pblctDtaSn=13997&clCode=P07&menuCl=P07&pageIndex=1>.

52 Fareed Zakaria, “South Korean President: North Korea Remains an Imminent Threat,” *CNN*, September 25, 2022, <https://edition.cnn.com/videos/tv/2022/09/25/exp-gps-0925-south-korean-president-yoon-north-korea-threat.cnn>.

53 Seong-geun Choi and Jun-sik Park, “중국에 한반도 타격 명분...대만 전쟁시 ‘연루의 함정’ 경고 나왔다 [A Pretext for China to Attack on the Korean Peninsula: Warning Issued about an 'Entrapment Trap' in a Taiwan Conflict],” *Money Today*, April 27, 2025, <https://news.mt.co.kr/mtview.php?no=2025042700581989589>.

54 Song Sang-ho, “US Looks to 'Calibrate' USFK Posture to Deter China: Senior Official,” *Yonhap News*, May 29, 2025, <https://en.yna.co.kr/view/AEN20250529011000315>.



experts reject this view, however, warning that US bases in South Korea would likely become targets of Chinese attacks, thereby drawing South Korea into an unwanted conflict.⁵⁵

The United States

The US interprets North Korea's evolving nuclear strategy and its implications quite differently from South Korea—as shown in table 1, the two allies' views align on only two out of five key aspects. Like Seoul, many in Washington have raised concerns that Pyongyang's evolving strategy increases the likelihood of a nuclear first use, citing the country's 2022 nuclear law.⁵⁶ Moreover, North Korea's continued advancement and diversification of its nuclear weapons are viewed as further exacerbating this risk. Narang, then-Acting Assistant Secretary of Defense for Space Policy, emphasized in a 2024 speech that North Korea's ongoing nuclear developments are pushing it to recklessly threaten South Korea and increasingly the US.⁵⁷

The US also acknowledges that North Korea's evolving nuclear strategy raises the potential for localized military provocations by Pyongyang. In other words, Washington agrees that Pyongyang's evolution has heightened the likelihood that North Korea will use nuclear coercion to achieve economic, political, and even military objectives. The 2023 analysis by the Office of the Director of National Intelligence (ODNI) on North Korea, produced in January 2023 and declassified in June of the same year, serves as a key resource for understanding the US perspective. The document analyzes the potential purposes for which North Korea might use its nuclear arsenal through 2030.⁵⁸ It assesses as "high" the likelihood that nuclear weapons could be used for coercive purposes and notes that Kim "may use limited military force to raise tensions as a means to press key foreign governments into adopting positions favorable to his objectives, confident that his growing nuclear capabilities will deter any unacceptable retaliation or consequences."⁵⁹ The 2025 ODNI annual report does not directly address how North Korea's evolving nuclear strategy affects its behavior, but it does note that "Pyongyang is expanding its capacity for coercive operations and using new tactics as it becomes more confident in its nuclear deterrent," highlighting the Kim regime's growing assertiveness fueled by its advancing nuclear capabilities.⁶⁰

The ODNI's annual report and some American experts point to an increasing likelihood that North Korea could launch low-level attacks against South Korea, including shelling disputed islands in the Yellow Sea and resuming provocations along the Northern Limit Line. The experts view these potential local provocations as attempts to maximize the effectiveness of coercive threats for political or economic gains.⁶¹ Many in Washington, however, assess that coercive nuclear threats are highly unlikely to lead to a full-scale invasion undertaken to reunify the Korean Peninsula

55 Beom-heum Baek, "대만유사는 한국유사 . . . 한반도 확산 방지해야 [A Taiwan Contingency Is a Korea Contingency . . . The Spillover to the Korean Peninsula Must be Prevented]," *Hankyoreh*, June 18, 2025, <https://www.hani.co.kr/arti/opinion/because/1203534.html>.

56 For example, see Bruce Klingner, "Testimony Submitted to the Committee on Natural Resources Subcommittee on Indian and Insular Affairs United States House of Representatives 'North Korea's Missile Threat to the Indo-Pacific Region,'" March 5, 2025, <https://www.congress.gov/119/meeting/house/117978/witnesses/HHRG-119-II24-Wstate-KlingnerB-20250305.pdf>; United States Senate Committee on Armed Services, "Testimony on the Posture of United States Indo-Pacific Command and United States Forces Korea in Review of the Defense Authorization Request for Fiscal Year 2026 and the Future Years Defense Program," April 10, 2025, 4, <https://www.armed-services.senate.gov/imo/media/doc/4102025fulltranscript.pdf>.

57 Vipin Narang, "Nuclear Threats and the Role of Allies: Remarks by Acting Assistant Secretary of Defense for Space Policy Dr. Vipin Narang at CSIS," August 1, 2024, <https://www.defense.gov/News/Speeches/Speech/Article/3858311/nuclear-threats-and-the-role-of-allies-remarks-by-acting-assistant-secretary-of/>.

58 US Office of the Director of National Intelligence, "North Korea: Scenarios for Leveraging Nuclear Weapons Through 2030," Doc. no. NIE 2023-00262-B, January 2023, <https://www.dni.gov/files/ODNI/documents/assessments/NIC-Declassified-NIE-North-Korea-Scenarios-For-Leveraging-Nuclear-Weapons-June2023.pdf>.

59 US Office of the Director of National Intelligence, "North Korea."

60 US Office of the Director of National Intelligence, "Annual Threat Assessment of the US Intelligence Community," March 2025, 27, <https://www.dni.gov/files/ODNI/documents/assessments/ATA-2025-Unclassified-Report.pdf>.

61 US Office of the Director of National Intelligence, "Annual Threat Assessment of the US Intelligence Community," 27; Frances Mao, "Kim Jong Un: Is North Korea's Leader Actually Considering War?," BBC, January 23, 2024, <https://www.bbc.com/news/world-asia-68052515>.

under communism.⁶² For example, the 2023 ODNI analysis mentioned above notes that North Korea's nuclear use "to seize territory and achieve political dominance over the Peninsula . . . will be much less likely than the strategy of coercion."⁶³

Washington's assessments of the situation have led to a position that differs from Seoul's regarding the need for a significantly more explicit commitment to extended deterrence. Washington does acknowledge some need for greater specificity, which has led to the establishment of the NCG and efforts to push for a CNI initiative.⁶⁴ While striving to enhance the specificity of its extended deterrence commitments, however, the US has also expressed opposition to additional measures sought by Seoul, such as the redeployment of nuclear weapons and the adoption of nuclear sharing arrangements.⁶⁵ Fundamentally, Washington wants to maintain a degree of ambiguity, out of concern that overly explicit commitments could increase the risk of being drawn into a nuclear war.⁶⁶ Such commitments could limit Washington's flexibility to employ alternative options, such as massive conventional retaliation or a decapitation strike aimed at eliminating Kim Jong Un.⁶⁷

Moreover, Washington believes that overly specific commitments would be counterproductive, emphasizing the value of calculated ambiguity.⁶⁸ This stance rests on the belief that ambiguity forces adversaries to constantly guess about US red lines and retaliation

methods, keeping nuclear response a possibility even in unlikely scenarios. This, in turn, promotes caution in adversarial decisions about whether to invade and thereby strengthens deterrence.⁶⁹ Additionally, Washington believes that excessively specific and detailed nuclear commitments for numerous scenarios could undermine the credibility of extended deterrence. If North Korea concludes that a US deterrent nuclear threat in a particular scenario is exaggerated or a bluff, it might doubt the credibility of all other US nuclear commitments.⁷⁰ Therefore, Washington prefers to avoid overly detailed or specific declaratory language in favor of ambiguous commitments.

Finally, Washington views the current size and military capabilities of the USFK as substantial and sufficient to deter North Korea. The Trump administration is reportedly even considering withdrawing about 4,500 troops from the 28,500-strong USFK,⁷¹ signaling that it wants Seoul to take on a greater role in countering North Korea.⁷² In this context, the US appears to regard permanent stationing of strategic deterrent assets or the redeployment of nuclear weapons to South Korea as politically unwise and militarily redundant.⁷³ A former US official at the National Security Council, for example, argued that redeployment of these assets is unnecessary and would undermine extended deterrence. The official remarked that redeployment would be akin to announcing that "we will use nukes in Korea rather than engage our homeland.

62 For an exception among US analysts, see Robert L. Carlin and Siegfried S. Hecker, "Is Kim Jong Un Preparing for War?," *38 North*, January 11, 2024, <https://www.38north.org/2024/01/is-kim-jong-un-preparing-for-war/>.

63 US Office of the Director of National Intelligence, "North Korea."

64 White House, "Washington Declaration"; US Department of Defense, "Joint Press Statement on the Fourth Nuclear Consultative Group Meeting," January 10, 2025, <https://www.defense.gov/News/Releases/Release/Article/4026575/joint-press-statement-on-the-fourth-nuclear-consultative-group-meeting/>.

65 Jung In-hwan, "US Ambassador to S. Korea Rebukes Ruling Party's Calls for Tactical Nukes," *Hankyoreh*, October 19, 2022, https://english.hani.co.kr/arti/english_edition/e_national/1063385.html.

66 Do Young Lee and Ian Bowers, "Bridging the Ambiguity-Explicitness Gap in the US-South Korean Alliance," *War on the Rocks*, July 28, 2025, <https://warontherocks.com/2025/07/bridging-the-ambiguity-explicitness-gap-in-the-u-s-south-korean-alliance/>.

67 Michael Lee, "Conventional Capabilities, Nuclear Ambiguity Key to US Extended Deterrence, Say Experts," *Korea JoongAng Daily*, December 7, 2023, <https://koreajoongangdaily.joins.com/news/2023-12-07/national/northKorea/Conventional-capabilities-nuclear-ambiguity-key-to-US-extended-deterrence-say-experts-/1930468>.

68 Sangkyu Lee, Suon Choi, Adam Mount, and Toby Dalton, "Divergent South Korean and American Perceptions on Deterring North Korea," Carnegie Endowment for International Peace, June 27, 2024, <https://carnegieendowment.org/research/2024/06/nuclear-for-nuclear-understanding-divergent-south-korean-and-american-perceptions-on-deterring-north-korea?lang=en>. For an exceptional view among US experts, see Ji Da-gyum, "US Needs 'Strategic Clarity' on North Korea Deterrence: Report," *Korea Herald*, October 30, 2023, <https://www.koreaherald.com/article/3246194>.

69 Matthew Costlow, "Believe It or Not: US Nuclear Declaratory Policy and Calculated Ambiguity," *War on the Rocks*, August 9, 2021, <https://warontherocks.com/2021/08/believe-it-or-not-u-s-nuclear-declaratory-policy-and-calculated-ambiguity/>.

70 Lee et al., "Divergent South Korean and American Perceptions on Deterring North Korea."

71 Nancy A. Youssef, Alexander Ward, and Timothy W. Martin, "US Considers Withdrawing Thousands of Troops from South Korea," *The Wall Street Journal*, May 23, 2025, <https://www.wsj.com/world/asia/u-s-considers-withdrawing-thousands-of-troops-from-south-korea-725a6514>. The Pentagon has denied the report as untrue. See Song, "US Looks to 'Calibrate' USFK Posture to Deter China: Senior Official."

72 Song, "US Looks to 'Calibrate' USFK Posture to Deter China: Senior Official."

73 Eunjung Cho, "전문가들 '한국내 전술핵 재배치, 군사적 실익 적고 미한 동맹에 부담만 가중' [Tactical Nukes in S. Korea Offer Little Military Advantage, Strain US-ROK Alliance, Experts Say]," *VOA Korea*, October 12, 2022, <https://www.voakorea.com/a/6785739.html>; "US Hints at Opposition to Permanent Deployment of Strategic Assets in S. Korea," *KBS World*, October 19, 2022, https://world.kbs.co.kr/service/news_view.htm?lang=e&Seq_Code=173154.

... We have to say our homeland is also threatened along with your homeland.”⁷⁴

The Trump administration has signaled that it is considering shifting USFK’s focus from strictly deterring North Korea to also incorporating broader missions beyond the Korean Peninsula.⁷⁵ In May 2024, Elbridge Colby, who was later appointed as Undersecretary of Defense for Policy, told South Korean media that the USFK’s role should shift toward countering China.⁷⁶ Colby being named to the Pentagon’s number three post has raised concerns in Seoul that Washington will want a broader regional role for USFK than Seoul prefers—a divergence that could further weaken South Korea’s confidence in US extended deterrence.⁷⁷

Conclusion

North Korea’s nuclear strategy has evolved; as conditions have changed, the US and South Korea have diverged in their interpretations of this change. This growing divergence explains the recent sharp decline in South Koreans’ confidence in US extended deterrence: South Koreans believe that the US is downplaying the significance of North Korea’s evolving nuclear capabilities and posture, and failing to take appropriate measures to address the new threats this development poses.

Pyongyang also appears to be exacerbating intra-alliance discord by selectively threatening Seoul with nuclear first use while refraining from doing so toward the continental US. Pyongyang’s announcement that it is no longer seeking reconciliation with South Korea and the deployment of various short-range nuclear and conventional platforms targeting the South seem calibrated to instill maximum fear

in Seoul.⁷⁸ How the US effectively responds to North Korea’s divergent threats will be pivotal in ensuring credible extended deterrence for Seoul.

Since the start of the second Trump administration, American policymakers have increasingly viewed North Korea’s nuclear threat to South Korea and its threat to the US homeland as distinct challenges. Washington has signaled that it may prioritize the “defense of the US homeland” while gradually shifting deterrence responsibilities on the Korean Peninsula to Seoul.⁷⁹ This bifurcated approach would provide the US with greater strategic flexibility in the Indo-Pacific region, especially to counter China’s regional ambitions.

This approach, however, could encourage North Korean nuclear provocations or military adventurism, which could backfire if a crisis then requires deeper US involvement in military contingencies on the Korean Peninsula. It could also backfire if such a development, in turn, were to create strategic openings for China to move more assertively in the Taiwan Strait or the East China Sea, with negative consequences for stability elsewhere in the region. American policymakers, therefore, should move away from the belief that retasking USFK to focus on the Chinese threat must involve redeploying them outside the Korean Peninsula. Instead, American leaders should recognize that credible extended deterrence can be achieved on the Korean Peninsula and across the region by maintaining current USFK force levels or with minimal withdrawals.

South Korea can also serve as a strategic outpost for countering China’s regional dominance. This scenario is particularly important for addressing China’s growing maritime assertiveness in the Yellow Sea, which has become increasingly apparent in recent

74 Eunjung Cho, “한반도 전술핵 재배치는 확장 억지력 약화시켜...러, 북에 첨단 기술 제공 우려 커져 [Redeploying Tactical Nukes to the Korean Peninsula Weakens Extended Deterrence ... Growing Concerns over Russia Providing Advanced Technology to North Korea],” VOA Korea, June 1, 2024, <https://www.voakorea.com/a/7638594.html>.

75 Eunjung Cho, “주한미군, 북한 억제에서 역내 전력으로...중국 ‘격퇴’ 까지 고려 [US Forces Korea to Transform from Deterring North Korea to a Regional Force ... Even Considering ‘Defeating’ China],” VOA Korea, March 15, 2025, <https://www.voakorea.com/a/8011497.html?withmediaplayer=1>.

76 Song Sang-ho, “Ex-Pentagon Official Stresses Need for War Plan Rethink, Swift OPCON Transfer, USFK Overhaul,” *Yonhap News*, May 8, 2024, <https://en.yna.co.kr/view/AEN20240508000300315>.

77 Moon-whi Wi, “콜비 미국방차관 등장에 주한미군 역할 조정?...韓 핵무장은? [Colby’s Confirmation as US Undersecretary of Defense for Policy: Adjusting USFK’s Role? ... South Korea’s Nuclear Armament?],” *The JoongAng*, April 9, 2025, <https://www.joongAng.com/article/25327280>.

78 Heather Chen and Yoonjung Seo, “North Korea Says It Will No Longer Seek Reunification with South Korea, Will Launch New Spy Satellites in 2024,” CNN, January 1, 2024, <https://edition.cnn.com/2023/12/31/asia/north-korea-reconciliation-south-korea-intl-hnk/index.html>; Kim Tong-Hyung, “North Korean Leader Kim Supervises Latest Test of New Multiple Rocket Launcher,” Associated Press, May 11, 2024, <https://apnews.com/article/north-korea-kim-jong-un-multiple-rocket-launchers-russia-24072528bcc233072c1a56ce7bf370da>; Jiwon Song, “South Koreans Stay Calm as They See Showmanship in the North’s Escalating Threats,” Associated Press, February 6, 2024, <https://apnews.com/article/south-korea-mood-north-korea-weapons-e6022b5d5692acac1f658c3d8bc5d1bb>.

79 US Department of Defense, “Statement on the Development of the 2025 National Defense Strategy,” May 2, 2025, <https://www.defense.gov/News/Releases/Release/Article/4172735/statement-on-the-development-of-the-2025-national-defense-strategy/>; Kim Eun-joong, Roh Suk-jo, and Park Su-hyeon, “US Troop Cuts in Korea Back on the Table as Pentagon Weighs Indo-Pacific Shift,” *Chosun Daily*, May 23, 2025, <https://www.chosun.com/english/national-en/2025/05/23/IT2ZBBDE4JDSVKHF5UZERQJBE4/>.

months.⁸⁰ Indeed, concerns are mounting among both South Korean and American experts that China is seeking to transform the Yellow Sea into a “second South China Sea.” Beijing has recently installed large floating steel structures—claimed to be aquaculture cages—in the Provisional Measures Zone (PMZ) established between South Korea and China. These actions echo China’s previous pattern of converting what were originally weather-monitoring stations in the South China Sea into military installations.⁸¹

Therefore, a more appropriate approach would be to maintain the overall size of the USFK while restructuring its current Army-centric composition—centered around the Eighth Army—and gradually increasing the proportion of naval and air forces equipped with enhanced intelligence, surveillance, and reconnaissance (ISR) capabilities. This strategy would allow Washington to simultaneously pursue three objectives: (1) maintaining robust extended deterrence on the Korean Peninsula; (2) checking

China’s pursuit of regional hegemony; and (3) reassuring Seoul of Washington’s unwavering commitment. Furthermore, by enabling USFK to assume multiple missions that counter both North Korea and China simultaneously, this approach would also contribute to the Trump administration’s purported pursuit of greater strategic flexibility for USFK.⁸² ●

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80 Choe Sang-Hun, “China Calls Them Fish Farms. South Korea Fears They Have Another Use,” *The New York Times*, June 24, 2025, <https://www.nytimes.com/2025/06/24/world/asia/china-south-korea-sea-dispute.html>; Roh Sukjo, “[단독] 서해 구조물에 온누리호 접근하자 중 합정 등 5척이 둘러쌌다” [(Exclusive) When the Onnuri Vessel Approached the West Sea Structures, Five Chinese Vessels Surrounded It], *Chosun Ilbo*, June 27, 2025, <https://www.chosun.com/politics/diplomacy-defense/2025/06/27/17RHSNQCOFFS3EFNPXTMPVUIOA/>.

81 Jennifer Jun and Victor Cha, “Chinese Platforms in the Yellow Sea’s South Korea-China PMZ,” Center for Strategic and International Studies, June 23, 2025, <https://beyondparallel.csis.org/chinese-platforms-in-the-yellow-seas-south-korea-china-pmz/>.

82 Song Sang-ho, “(News Focus) USFK’s Strategic Flexibility Issue Resurfaces as Pentagon Focuses on Deterring China,” *Yonhap News*, May 15, 2025, <https://en.yna.co.kr/view/AEN20250515000251315>.

The Domestic Politics Behind China's Strategic Force Improvements

Nicola Leveringhaus

China's nuclear expansion is occurring at a time of major domestic political change, with implications for its nuclear weapons strategy. Domestic changes of note include defense reforms, a contraction and politicization of China's strategic community, as well as sustained top-down interest in commemoration of China's nuclear weapons past, such as the "Two Bombs, One Satellite" program. These domestic political changes represent an unprecedented elevation of the national, social, and political value of China's nuclear weapons by the CCP in the Xi era. How should others in the region and beyond best respond to these changes? The article ends with some thoughts on foreign state engagement with China as Beijing expands and elevates the domestic importance of its nuclear arsenal.

China's strategic force is undergoing vast and unprecedented levels of improvement. There is a compelling explanation for this: Chinese military modernization, which spans decades, now yields visible results, bolstering national strategic deterrence. Xi Jinping, the current Chinese Communist Party (CCP) leader, today commands the most powerful military since the People's Republic of China was established in 1949.¹ Chinese strategic capabilities have become more accurate, mobile, and diverse across the air, sea, land, space, and cyber domains than ever before. These strategic assets include an estimated 600 nuclear warheads; vast numbers of intermediate-range conventional missiles, including the DF-26, which has dual-use / "hot swappable" warhead

functions; an emerging operational nuclear mission for bombers; and since 2020, the world's largest navy, which includes six Jin-class nuclear ballistic missile submarines (SSBNs).²

China's strategic force improvements are happening in real time and constitute an unsettling new technological reality for the US and its allies and partners in the Indo-Pacific. Indeed, since 2024 the US frames China as part of a "multiple nuclear challenger problem,"³ an alteration to the "two-nuclear-peer" framing in 2023 that pitted China alongside Russia, with newer predictions that China might have at least 1,000 nuclear warheads by 2030 and 1,500 by 2035.⁴ Excellent scholarly literature explains recent changes in Chinese nuclear capabilities in relation to United States capabilities, specifically how US strat-

1 Fiona A. Cunningham's recent book, *Under the Nuclear Shadow: China's Information-Age Weapons in International Security* (Princeton University Press, 2025) is excellent on the history of these developments. See also M. Taylor Fravel and Evan S. Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure," *International Security* 35, no. 2 (2010): 48–87.

2 Hans M. Kristensen, Matt Korda, Eliana Johns, and Mackenzie Knight, "Chinese Nuclear Weapons 2025," *The Bulletin of Atomic Scientists* 81, no. 2 (2025): 135–60, <https://doi.org/10.1080/00963402.2025.2467011>.

3 "Nuclear Threats and the Role of Allies," remarks by Acting Assistant Secretary of Defense for Space Policy Dr. Vipin Narang at CSIS, August 1, 2024, <https://www.defense.gov/News/Speeches/Speech/Article/3858311/nuclear-threats-and-the-role-of-allies-remarks-by-acting-assistant-secretary-of/>.

4 Lawrence Livermore National Laboratory's Center for Global Security Research (CGSR), "China's Emergence as a Second Nuclear Peer: Implications for US Nuclear Deterrence Strategy," 2023, https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf.

egy might be unintentionally fueling China's nuclear expansion, suggesting that a dangerous entangled security dilemma dynamic is emerging between the states.⁵ Yet much less literature discusses wider domestic political changes and how these shape Chinese nuclear thinking today.⁶

Evolving Chinese Strategic Capabilities

In the last five to six years, Chinese strategic forces have become much more mobile, precise, and diverse in their operationality in at least three areas.⁷ First, China now has sea-based nuclear deterrent capabilities, having deployed (since 2015) six Jin-class SSBNs with submarine-launched ballistic missiles (SLBMs) to the South China Sea. External estimates suggest that China seeks around ten SSBNs in total, with improved anti-detection capabilities (making the SSBNs quieter) as well as heightened readiness through a desired continuous-at-sea ability. This Chinese effort reflects a wider push among states in the Indo-Pacific to secure deterrence at sea: North Korea, India, and Pakistan are all developing—to varying degrees of success—SSBNs.

A second advancement relates to intermediate missiles like the DF-26, which are within range of Northeast Asia as well as India and Guam. The warheads on these missiles can be changed quickly from a conventional to a nuclear role, hence the “hot-swappable” element. While this element allows greater flexibility in response to an attack,⁸ analysts worry that it could confuse the enemy and lead to inadvertent escalation in a crisis.⁹

A third advancement relates to new missile silo bases for longer-range intercontinental ballistic missiles (ICBMs) like the DF-41. The three new Chinese

silo bases were identified using commercial satellite imagery in 2021.¹⁰ These sites are situated in northern China, specifically Jilantai in Inner Mongolia, the northwestern city of Yumen, and Hami, near Yumen. Chinese officials continue to deny that these sites are silo bases, labeling them windmills instead. Silo bases are important to survivability because they harden and protect missiles from an incoming strike; if these silo fields were to be filled, they could in total house over 300 ICBMs, such as the DF-41, which could reach the continental US.

Today these technical developments give the CCP leadership more strategic options than ever before, including for doctrinal transformation should Beijing desire such change in the future. It remains unclear whether these new capabilities translate into a transformative shift away from assured retaliation and China's declared “no first use” (NFU) pledge.¹¹ It is therefore useful to look beyond technical changes to political indicators to interpret China's changing approach to nuclear weapons.

Domestic Politics and Nuclear Weapons in China

Within the last decade, the Chinese leadership has centralized control over foreign and security policy initiatives and debates, with important effects on Chinese nuclear policy and strategy. First, the CCP has elevated the national social and political value of its nuclear weapons to an unprecedented degree, precisely at a time when China's capabilities and options are expanding rapidly. Second, China's domestic nuclear expert community has contracted, with fewer senior nuclear strategy experts debating and shaping nuclear policy and strategy in China.

5 Henrik Stålhane Hiim, M. Taylor Fravel and Magnus Langset Trøan, “The Dynamics of an Entangled Security Dilemma: China's Changing Nuclear Posture,” *International Security* 47, no. 4 (2023): 147–87, https://doi.org/10.1162/isec_a_00457. See also David Logan and Phillip C. Saunders, “Discerning the Drivers of China's Nuclear Force Development: Models, Indicators, and Data, National Defense University,” July 2023, <https://ndupress.ndu.edu/Media/News/Article/3471053/discerning-the-drivers-of-chinas-nuclear-force-development-models-indicators-an/>, which provides a very detailed and excellent discussion of different models China might be considering for its future nuclear strategy.

6 An exception to this is a report published after the first draft of this article by Tong Zhao, “Political Drivers of China's Changing Nuclear Policy: Implications for US-China Nuclear Relations and International Security,” Carnegie Endowment for International Peace, July 2024, 21–23, <https://carnegieendowment.org/research/2024/07/china-nuclear-buildup-political-drivers-united-states-relationship-international-security?lang=en>. This report focuses in on the China-US relationship but also highlights a diminishing role for Chinese nuclear experts, as this article also argues.

7 Nicola Leveringhaus, “Chinese Nuclear Force Modernization and Doctrinal Change,” IFRI, August 2022, <https://www.ifri.org/en/publications/briefings-de-lifri/chinese-nuclear-modernization-and-doctrinal-change>.

8 Andrew S. Erickson, “Academy of Military Science Researchers: Why We Had to Develop the Dongfeng-26 Ballistic Missile,” December 5, 2015, <https://www.andrewerickson.com/2015/12/academy-of-military-science-researchers-why-we-had-to-develop-the-dongfeng-26-ballistic-missile-bilingual-text-analysis-links/>.

9 James M. Acton, “Escalation Through Entanglement: How the Vulnerability of Command-and-Control Systems Raises the Risks of an Inadvertent Nuclear War,” *International Security* 43, no. 1 (2018): 65.

10 Hans Kristensen, “China's Expanding Missile Training Area: More Silos, Tunnels, and Support Facilities,” Federation of American Scientists, fas.org; Jeffrey Lewis and Decker Everleth, reported in https://www.washingtonpost.com/national-security/china-nuclear-missile-silos/2021/06/30/0fa8debc-d9c2-11eb-bb9e-70fda8c37057_story.html; Matt Korda and Hans Kristensen, “China Is Building a Second Nuclear Missile Silo Field,” Federation of American Scientists, fas.org.

11 David Logan and Phillip C. Saunders, “Discerning the Drivers of China's Nuclear Force Development: Models, Indicators, and Data, National Defense University,” July 2023, <https://ndupress.ndu.edu/Media/News/Article/3471053/discerning-the-drivers-of-chinas-nuclear-force-development-models-indicators-an/>.

The public elevation of nuclear weapons in China today is evident in CCP commemoration of its own strategic weapons history, which focuses on the Two Bombs, One Satellite program [两 一星, liang dan yi xing] that resulted in three major scientific achievements: China's atomic test in 1964, its hydrogen test in 1967, and a satellite launch in 1970.¹² Another focus for commemoration is the Third Line / Front [三线, Sanxian], a massive industrial and civil defense project from the Mao era that moved strategic assets and defense industries away from vulnerable coastal and city areas inwards into mountainous and inaccessible areas to ensure survivability in the event of major war.¹³ China actively draws on both past events, invoking the "spirit" [精神, jing shen] of the Two Bombs, One Satellite and Third Line programs to incentivize ordinary Chinese citizens and scientists working in strategic sectors in China (from high-speed rail to space).

This commemoration comes at a time when Xi has also openly reinforced the present-day value of China's strategic weapons with a stated aim in 2022 to build "a strong system of strategic deterrence."¹⁴ Earlier closed-door speeches by Xi in 2012 and 2014 to China's People's Liberation Army Rocket Forces (PLARF, then named the Second Artillery) reportedly reinforce how important the force is to both China's security as well as its national rejuvenation as a great power.¹⁵ Xi has also made clearer in public statements where the CCP sits in the nuclear decision-making process, reaffirming that the Party's Central Military Commission (CMC) and Standing Politburo make the ultimate decision for any use (or threat of use) of strategic weapons, hence the party mantra that "the CMC leads, the theatre commands fight, and the services equip."¹⁶

The anti-corruption campaign has also reinforced centralization. In 2023, under the banner of the anti-corruption campaign, former PLARF commander Li Yuchao and his deputies Liu Guangbin and Zhang

Zhenzhong, as well as another former commander of the Rocket Force at the CCP National Congress, General Zhou Yaning, were removed from power. Corruption is broadly defined, from practical concerns over the purchase of substandard technology and faulty operation of weaponry like missiles, to fears around external leaks of information and disloyalty to the Party. The Party has also sought to increase control through political education campaigns within the PLA.¹⁷ These individual high-profile expulsions and political education campaigns speak to domestic efforts to centralize and purge strategic military bureaucracies from corruption and shore up a deeper sense of loyalty to the Party.¹⁸

Defense reforms also occurred in 2015 and 2024, expanding the operational mission mandate and force status of China's nuclear deterrents, especially its missiles.¹⁹ The first of these reforms, in December 2015, elevated the status of China's land-based strategic nuclear and conventional forces, renaming them as the PLARF. This change can be understood as part of a wider effort to elevate the public status of these forces in domestic politics and their role as important markers of great power. Indeed, from 2017 onwards, Xi Jinping started to talk much more openly about his ambition for China to possess a top-tier world-class military, in which possession of a credible strategic arsenal would be key.²⁰ In the April 2024 reforms, China established four new "arms" (Aerospace Force, Cyberspace Force, Information Support Force, and Joint Logistics Support Force) to support the four services (PLA, PLAAF, PLAN, and PLARF).

Amid these reforms, Xi has spoken of an enlarged operational mission for the PLARF. Traditionally, the PLARF has been tasked to focus on retaliatory missions, namely counterattack (striking after the enemy has struck [后发制人, houfa zhiren]). Yet recent reporting in China suggests that new declared roles

12 Nicola Leveringhaus, "The Politics of Nuclear Commemoration in Asia: The China Case," ANU Coral Bell School, 2021, <https://www.youtube.com/watch?v=B6o-TM-exUM>.

13 Paul Kendall and Covell Meyskens, "Afterlives of the Third Front," *The China Quarterly* 260 (2024): 867–71.

14 "Xi Jinping Proposed to Achieve the Centenary Goal of the Founding of the Army and Create a New Situation in the Modernization of National Defense and the Army," October 16, 2022, https://www.gov.cn/xinwen/2022-10/16/content_5718831.htm.

15 "China Unveils Most Advanced Dongfeng-41 Intercontinental Strategic Nuclear Missiles," *China Military*, 2019, http://eng.chinamil.com.cn/CHINA_209163/TopStories_209189/9642096.html.

16 Research Institute of Party History and Documentation of the CPC Central Committee, *Xi Jinping on the Holistic Approach to National Security* (Central Party Literature Press, 2018), <http://en.qstheory.cn/HolisticApproachtoNationalSecurity.html>.

17 经党中央 委主席 近平批准 中央 委印发《于构建新 代人民 思想政治教育体系的意见》[With the approval of Xi Jinping, Chairman of the Central Military Commission, the Central Military Commission issued the "Opinions on Constructing the Ideological and Political Education System of the People's Army in the New Era"], April 7, 2021, <http://politics.people.com.cn/n1/2021/0407/c1001-32072091.html>.

18 US scholarship on the role of military reforms for Party centralization includes excellent work such as Phillip C. Saunders et al., *Chairman Xi Remakes the PLA Assessing Chinese Military Reforms* (US National Defense University, 2019), <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>.

19 The latest defense white paper and strategic guidelines [军事战略方针, *junshi zhanlue fangzhen*] were in 2019.

20 Xi Jinping, "决胜全面建成小康社会夺取新时代中国特色社会主义伟大胜利—在中国共产党第十九次全国代表大会上的报告 [Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era; hereafter "Work Report"]," October 18, 2017, http://www.gov.cn/zhuanti/2017-10/27/content_5234876.htm.

have been recently added to the PLARF beyond counterattack, including “counter-balancing” and “winning wars.”²¹ Strategic counterbalancing seems to reflect a geopolitical rather than technically driven assessment in Beijing that, in an increasingly hostile and difficult external security environment, more weapons would have a stabilizing effect between China and its main competitors.²² Less is known from open-source information about whether “winning wars” includes using nuclear missions as opposed to other nonnuclear strategic assets in the cyber/space/advanced conventional domain to achieve this goal.²³ The talk of “winning wars” may be an attempt to talk up emerging capabilities and keep the PLA incentivized in the coming decades of military modernization, or it may simply be a signal attempting to intimidate the United States.

Collectively, these domestic political changes represent an unprecedented elevation of the national, social, and political value of China's nuclear weapons by the CCP in the Xi era. By CCP design, the past, present, and future of China's nuclear arsenal matters more domestically and politically than ever before.

The second domestic political change relates to a shrinking of the nuclear expert community, including established and more senior Chinese arms control experts, since 2012.²⁴ This community includes national weapons engineers, physicists, think tank analysts, and academics in fields such as international relations. Under former leaders Jiang Zemin and Hu Jintao, these actors contributed to national debates around China's nuclear strategy and posture, and conducted exchanges with foreign counterparts through dialogues and knowledge exchange. This expert community facilitated China's signature to the Comprehensive Test Ban Treaty in 1996, and many were participants in dialogues with the United States, such as the discontinued Lab-to-Lab dialogue

of the 1990s, or bilateral Track 1.5 dialogues run by the Pacific Forum.²⁵ Yet the influence of these Chinese actors has seemingly waned in the Xi Jinping era.²⁶ Several Chinese domestic experts, for example, did not anticipate examples of Chinese expansion, such as the construction of the silo bases identified through open-source commercial satellite imagery in 2021.²⁷ As China's military builds up, the level of informed insight that can be offered by this community of outward-facing experts—particularly of mid- to senior-level experts—seems to be shrinking.

This contraction can be attributed in part to practical factors, such as constrained mobility during and after the COVID-19 pandemic and the reality that some of China's senior nuclear experts are now reaching retirement age.²⁸ The contraction also reflects broader restructuring of the domestic expert landscape in the Xi era and reorganization of disciplines within Chinese academic institutions. For example, the rise of party committees in universities has increased, as have changes to the study of international relations within one of the top-tier universities based in Beijing, Tsinghua University, where, for example, the study of national security is separate from area studies.²⁹

The domestic environment in which Chinese nuclear strategy is debated has become more centralized and politicized. The effects of these changes are as yet unknown. The near-term outcome of this contraction could be a more CCP-aligned, paranoid, younger, and strategically less informed Chinese expert community capable of engaging on nuclear issues with outsiders. As higher education has come under tighter political control, newer scholars may face greater domestic political scrutiny over what they say and write, limiting the potential for candid conversation in dialogue with foreign counterparts. Although we should not assume

21 Brandon J. Babin, “Xi Jinping's Strangelove: The Need for a Deterrence-Based Offset Strategy,” in *Modernizing Deterrence: How China Coerces, Compels, and Deters*, ed. Roy D. Kamphausen, February 16, 2023, <https://www.nbr.org/publication/modernizing-deterrence-how-china-coerces-compels-and-deters/>.

22 Hiim, Fravel, and Trøan, “The Dynamics of an Entangled Security Dilemma,” 147–87.

23 On this, see Cunningham, *Under the Nuclear Shadow*.

24 Tong Zhao offers some additional factors in “Political Drivers of China's Changing Nuclear Policy: Implications for US-China Nuclear Relations and International Security,” Carnegie Endowment for International Peace, July 2024, 21–23, https://carnegie-production-assets.s3.amazonaws.com/static/files/Zhao_Political%20Drivers_final-2024.pdf.

25 David Santoro and Robert Gromoll, “On the Value of Nuclear Dialogue with China, Pacific Forum,” 2020, https://pacforum.org/wp-content/uploads/2020/11/issuesinsights_Vol20No1.pdf. On the historical role of these actors over time in diplomatic arenas and Track 2 dialogues, see also Nicola Horsburgh, *China and Global Nuclear Order* (Oxford University Press, 2015), and Alastair Iain Johnston, *Social States: China in International Institutions, 1980–2000* (Princeton University Press, 2007). RAND published a report in 2023 looking at how to deepen Track 2 dialogues between the United States and China; see Amanda Kerrigan, Lydia Grek, and Michael J. Mazarr, “The United States and China—Designing a Shared Future, The Potential for Track 2 Initiatives to Design an Agenda for Coexistence,” RAND, November 21, 2023, https://www.rand.org/pubs/research_reports/RRA2850-1.html.

26 Tong Zhao, “Underlying Challenges and Near-Term Opportunities for Engaging China,” *Arms Control Today*, January/February 2024, <https://www.armscontrol.org/act/2024-01/features/underlying-challenges-and-near-term-opportunities-engaging-china>.

27 Tong Zhao, “Political Drivers of China's Changing Nuclear Policy,” 8–9.

28 Tong Zhao, “Political Drivers of China's Changing Nuclear Policy,” 23.

29 Yuxuan Jia and Ziluan Zeng, “Yan Xuetong Warns of Insulation of International Relations Discipline in China,” *The East Is Red*, April 2, 2024, <https://www.eastisred.com/p/yan-xuetong-warns-insulation-of-international>.

that this will make Beijing uninterested in arms control, or that a younger, more politically focused expert community will support larger forces and changed nuclear doctrine, the environment today prioritizes—to an unprecedented level—CCP preferences. More effort might be required to build shared understanding of nuclear strategy between Chinese experts and foreign counterparts. And it may be that a more centralized emerging nuclear community will narrow space for debate on force development, deployment, and use, or will reduce interaction between informed Chinese participants and outside actors on risk reduction and crisis management. Perhaps because the opportunities will be narrower as policy evolves, continued engagement is likely to be increasingly important.

Interaction Between China and the United States

China has become increasingly clear in outlining how specific US technologies affect its own strategic choices. Even decades ago, in the late 1990s, high-profile Chinese figures like former ambassador Sha Zukang never minced his words in calling out what he considered the damaging effect of US ballistic missile defense in Asia on China's small nuclear arsenal.³⁰ Chinese fears about the US deepening its commitment to missile defense continued into the 2000s following US abrogation of the Anti-Ballistic Missile (ABM) Treaty in 2003. More recently, in the 2010s and 2020s, these concerns have sharpened—still centered around damage limitation capabilities (missile defense), but with additional interest in conventional counterforce strikes in US nuclear strategy, evident in the 2018 and 2022 US nuclear posture reviews (NPRs)³¹ as well as the US decision to withdraw from the Intermediate Nuclear Forces (INF) Treaty in 2019. The US decision around INF especially was seen in Beijing as a deliberate effort by the US to increase its conventional counterforce capabilities in the Northeast Asian region to counter Chinese theater-level missiles in the region.³² Work in 2024 by Li Bin and Wu Riqiang argues that three specific sets of technology undermine China's nucle-

ar deterrent: the high kill probability of US missile defense interceptors in coordination with US allies in the region; US anti-submarine warfare limiting China's emerging SSBN capability; and a US space-based system (Ground Moving Target Indicator) to track Chinese mobile missiles.³³

Yet China's nuclear deterrent has only recently ballooned to deal with the external concerns and challenges above. Why did China take so long? Here domestic political considerations, combined with lessons from other nuclear powers, might offer some insight. As noted earlier, since 2012 nuclear weapons have assumed greater political and social value and prestige, especially when attached, as they are by Xi, to China's wider road to revival and national rejuvenation as a great power. China might also be looking to the experiences of other nuclear weapons states in managing their relations with the US. This includes Russia as well as other nuclear weapons states like India and North Korea. Yet how lessons drawn from nuclear decision-making in Russia, India, and North Korea might have shaped—actively or inadvertently—contemporary Chinese strategic decisions remains poorly understood.

Challenges and Responses from the US and Wider Region

US and regional responses to evolving Chinese nuclear strategy have so far focused largely on technological advancements rather than domestic politics. This approach has led to calls for US nuclear strategy to go beyond counterforce (military locations) targeting to include countervalue (population centers) targets in China as well.³⁴ Other experts recommend a buildup in US nuclear forces once the United States is no longer bound by the New START Treaty (likely from February 2026), as well as increased regional nuclear commitments to allies and a return to controversial capabilities featured in the 2018 NPRs such as the sea-launched cruise missile (SLCM-N).³⁵ Others have called for the US to adopt a sole-purpose nuclear doctrine (but not NFU) as part of a transition to an active denial strategy, one

30 Sha Zukang, "Can BMD Really Enhance Security?," Remarks at the Second US-China Conference on Arms Control, Disarmament, and Nonproliferation, April 28, 1999, Monterey, California; Chinese-Russian Press Communiqué on Consultations on Issues Pertaining to the ABM Treaty, April 14, 1999, <http://www.nti.org/db/china/engdocs/chrus499.htm>.

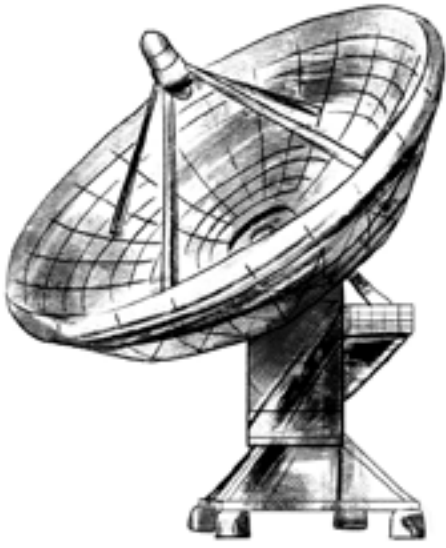
31 "Trump's US Nuclear Posture Review," <https://media.defense.gov/2020/May/18/2002302062/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>; "Biden's Nuclear Posture Review in 2022," <https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF>.

32 Hiim, Fravel, and Trøan, "The Dynamics of an Entangled Security Dilemma," 147–87.

33 Bin Li and Riqiang Wu, "US Strategy of Damage Limitation vis-à-vis China: Long-Term Programs and Effects," *China International Strategy Review*, 2024.

34 Keir Lieber and Daryl Press, "US Strategy and Force Posture for an Era of Nuclear Tripolarity," May 1, 2023, <https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/us-strategy-and-force-posture-for-an-era-of-nuclear-tripolarity/>.

35 CGSR, "China's Emergence as a Second Nuclear Peer."



that would also require allies to do more in terms of conventional deterrence.³⁶ It is unclear whether attempts by the US State Department in the Biden era to discuss NFU with China will continue in the second Trump administration. The 2024 speech by Vipin Narang, then-acting US secretary of defense for space policy, makes clear that the United States will continue to seek dialogue and forms of risk reduction.³⁷ All of these recommendations and approaches will likely have implications for long-standing discussions over mutual vulnerability—something long desired in Beijing, but something about which Washington has so far resisted official declarations.³⁸

In the immediate term, US partners and allies in Asia appear concerned that as China's nuclear arsenal expands, Beijing will increasingly become more confident in its ability to deter the United States' use of nuclear weapons.³⁹ For Taiwan, this confidence might lead China to initiate conventional conflict,

without fear of escalation to nuclear use from the US.⁴⁰ Outside the region, US commitments to the security of NATO because of the ongoing Russian war against Ukraine have filtered into the Asian regional security context, with Asian allies concerned about the ability and political will of the US to operate in multiple theaters simultaneously.

These fears reinvigorate preexisting domestic debates around nuclear weapons proliferation for some, as well as new deployment options in an extended deterrence for others. In South Korea, extended deterrence was reaffirmed in April 2023 through the Washington Declaration between the US and South Korea, but debates over the reliability of that commitment remain.⁴¹ In Japan, China's growing military capabilities and assertiveness have contributed to closer cooperation with the US over missile defense, continued consultation through the US-Japan Extended Deterrence Dialogue, and internal debates about nuclear sharing and conventional precision-strike options.⁴²

Wider multilateral US partner and allied responses to changes in Chinese strategic power have started to take shape. For example, AUKUS has catalyzed closer scientific, legal, political, and military discussions among Australia, the UK, and the US, a significant shift regardless of whether the arrangement delivers specific outputs on the timetable announced. Extending new partnerships into AUKUS Pillar II (emerging technologies), perhaps incorporating Japan and South Korea, could have a compounding effect in terms of scientific cooperation.⁴³ Put bluntly, China cannot re-create these multi-state global arrangements in strategic technology.

Conclusion

China's nuclear expansion is occurring at a time of major domestic political change, with implications for Chinese nuclear strategy. These developments

36 Quincy Institute, "Active Denial: A Roadmap to a More Effective, Stabilizing, and Sustainable US Defense Strategy in Asia," June 22, 2022, <https://quincyinst.org/research/active-denial-a-roadmap-to-a-more-effective-stabilizing-and-sustainable-u-s-defense-strategy-in-asia/#executive-summary>.

37 Narang, "Nuclear Threats and the Role of Allies." US interest in dialogue and risk reduction is also evident in an interview with US Assistant Secretary of State Mallory Stewart in 2024 in *Arms Control Today*, "Engaging China and Russia on Arms Control: An Interview with US Assistant Secretary of State Mallory Stewart," May 2024, <https://www.armscontrol.org/act/2024-05/interviews/engaging-china-and-russia-arms-control-interview-us-assistant-secretary>.

38 David Santoro, ed., "US-China Mutual Vulnerability Perspectives on the Debate," Pacific Forum Issues and Insights, May 2022, <https://pacforum.org/wp-content/uploads/2022/05/Issues-Insights-Vol.-22-SR-2.pdf>.

39 A parallel can be drawn to Russia and the war in Ukraine. See Michael O'Hanlon & Caitlin Talmadge, "America Shouldn't Insist on a Strategic Defeat of Russia," <https://thehill.com/opinion/international/4356734-america-shouldnt-insist-on-a-strategic-defeat-of-russia/12/13/2023>.

40 Bates Gill, "Introduction: Meeting the Challenge of China's WMD Buildup," National Bureau of Asian Research, NBR special report #109, May 2024, 5.

41 On this, please see Do Young Lee's article in this roundtable.

42 Wakana Mukai, "China's Nuclear Modernization and Its Implications for Japan," May 22, 2024, National Bureau for Asian Research, <https://www.nbr.org/publication/chinas-nuclear-modernization-and-its-implications-for-japan/>.

43 These observations are drawn from author interactions with the strategic policy community in Australia in February 2024, and with Foreign, Commonwealth, and Development Office (FCDO) and Ministry of Defence (MOD) officials in the UK in 2023 and 2024.

prompt a rethinking for foreign governments as to how best to engage with China in the nuclear domain.

Above all, foreign discussions with China on nuclear strategy will likely be shaped by and tethered to the ideological party and political preferences and the worldview of Xi Jinping to a higher degree than before. Indeed, strategic concepts are being contested already, such as preferences in China and Russia for the term “political stability” over “strategic stability.”⁴⁴ Engagements around arms control should therefore factor in not just technical assessments and awareness of Xi Jinping’s own statements on nuclear matters—as they likely do already—but also potential domestic political costs and pressures for Chinese counterparts. However, opportunities for engagement also exist, such as upgrading the P5 (Permanent Five of the UN Security Council) nuclear glossary of terms and expanding discussion in a P5-wide context around pre-missile launch notification built on actions China has taken unilaterally recently, as well as with Russia.

A domestic political lens for understanding the evolution of China’s nuclear arsenal also highlights that there may be utility in appealing to arguments around concepts like mutual vulnerability and NFU because they have strong political, rather than simply military, value for China. Yet these concepts will need to be discussed carefully, busting historical myths where necessary. For example, the historical scholarly record now shows that during the Cold War US-Soviet strategic stability—as it was then conceived—was not straightforward, not least because Soviets did not feel mutual vulnerability was enough.⁴⁵ Bringing in examples from American or European historical experiences may be less sensitive and could help reduce overconfidence around the strategic value of mutual vulnerability.

As demonstrated in this article, current-day emphasis in China on historical commemoration showcases

how politically valuable China’s strategic capabilities have become, and exclusively technical assessments of the balance of forces or nuclear posture miss these dimensions. Domestic political changes also matter for gauging which geopolitical arguments and by whom matter to China, especially beyond the US-China lens. As China enters a new era with respect to its nuclear forces, it is important to consider not just technologies and capabilities, but the wider domestic changes afoot. ●

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44 See Tong Zhao, “Political Drivers of China’s Changing Nuclear Policy.”

45 A recent piece (written after the first draft of this paper) by James Cameron in this journal develops this argument in great detail; please see “Negotiating Primacy: Strategic Stability, Superpower Arms Control, and the End of the Cold War,” *Texas National Security Review*, 2025, <https://tnsr.org/2025/03/negotiating-primacy-strategic-stability-superpower-arms-control-and-the-end-of-the-cold-war/>.

Cascades of Competition: Southern Asia, the Indo-Pacific, and AUKUS

Debak Das

Nuclear stability in Southern Asia is being shaped by different layers of competition in the Indo-Pacific. This article highlights two dynamics that are shaping nuclear competition in the region. The first, within Southern Asia, is states finding space to escalate at lower levels of conflict to address nuclear and military asymmetry. Pakistan is seeking to create space to escalate at lower levels of conflict against India, while India is doing the same against Pakistan on one side and China on the other. The second dynamic is a cascade of reactionary vertical proliferation that is occurring in the Indo-Pacific as a result of China and the United States' strategic competition. While Washington and Beijing are responding to each other's nuclear arsenals, India is responding to China's arsenal, and Pakistan is responding to India's nuclear modernization. The technology transfers and submarine proliferation in the Indo-Pacific precipitated by AUKUS are intensifying this dynamic.

Nuclear security in Southern Asia is at a crossroads. The two nuclear dyads in the region—India and Pakistan, and China and India—are on different trajectories. While the nuclear arms race between India and Pakistan has maintained the status quo despite occasional crises between the states, the competition between India and China has led to new doctrinal and structural changes in New Delhi's nuclear and conventional force postures. This shift is informed by two elements. The first is that the rise of China as a revisionist threat in the Indo-Pacific has precipitated the convergence of different multilateral constellations of states—aimed at checking Beijing—that include India. And second, and more importantly, China's recent territorial threat to India along the 4,057-kilometer-long disputed Line of Actual Control (LAC) has led to significant changes in India's conventional and nuclear forces.

There are two dynamics within the region that pose the biggest nuclear challenges to South Asia and the Indo-Pacific. The first, within Southern Asia,

is the dynamic of states finding space to escalate at lower levels of conflict to address nuclear and military asymmetry. Pakistan is seeking to create space to escalate at lower levels of conflict against India, while India is doing the same against Pakistan on one side and China on the other. The second dynamic is a cascade effect of reactionary vertical proliferation that is occurring in the Indo-Pacific region. This second effect is a result of China and the United States' strategic competition leading to nuclear modernization and vertical proliferation. The United States is reacting to China's nuclear modernization, while China is increasing its nuclear forces to remain competitive with Washington. Meanwhile, the qualitative and quantitative increase in Chinese nuclear forces has led to an Indian response to shore up its second-strike capability and maintain a minimum deterrent against Beijing. Furthermore, Pakistan is, in turn, responding to India's force modernization by strengthening its own nuclear forces and creating new spaces of asymmetric escalation against India to ensure that New Delhi's modernization does not

leave Pakistan at a strategic disadvantage. Nuclear submarine and other advanced military technology transfer arrangements between Australia, the United Kingdom, and the United States (under the AUKUS agreement) have only added to this dynamic, with increased insecurity and uncertainty in the Indo-Pacific.

Creating New Spaces of Escalation: Doctrines and New Rocket Forces

Nuclear modernization in the India-Pakistan dyad has seen both sides seek to match the other at every level of the ladder of escalation. Pakistan's nuclear forces have about 170 nuclear warheads; air- and ground-launched cruise missiles; and a host of short-, medium-, and long-range ballistic missiles.¹ Its doctrine of "full-spectrum deterrence" accounts for the first use of short-range battlefield nuclear weapons—like the Hatf IX Nasr—against India's conventional forces in a limited battlefield scenario. For Pakistan, this doctrine has been aimed at addressing its conventional military asymmetry with India.

Pakistan's doctrine of full-spectrum deterrence seeks to ward off the possibility of conventional war with India. As Gen. Khalid Kidwai, one of the architects of the doctrine, stated: "Nasr, specifically, was born out of a compulsion of . . . some people on the other side toying with the idea of finding space for a conventional war, despite Pakistan's nuclear weapons."² Specifically, this doctrine has targeted India's ability to conduct conventional operations against Pakistan in response to lower-level—especially sub-conventional—escalation. Recent statements by Pakistani officials (including Gen. Kidwai) have led to concerns that Islamabad has now reduced the minimum range of its nuclear weapons to zero meters.³ This means that beyond tactical nuclear weapons, Islamabad's nuclear arsenal might now include sub-kiloton nuclear projectiles like the Cold War-era Davy Crockett recoilless guns, or nuclear land mines that could either be detonated in place or travel very short distances.⁴

India has sought to match Islamabad with conventional and dual-use weapons at lower levels of

escalation. New Delhi's steady development of counterforce weapons systems—which are responsive, accurate, and shorter-range—has led scholars to believe that India's "no first use" (NFU) doctrine may no longer apply to a conflict with Pakistan.⁵ This belief stems from the perspective that counterforce weapon systems tend to be associated with first-use nuclear doctrines. India might be tempted to move toward a counterforce nuclear doctrine that could match Pakistan's potential use of battlefield nuclear weapons against conventional Indian forces. Such a strategy would aim to check Pakistan's ability to use tactical nuclear weapons, thereby creating a space for conventional Indian responses to sub-conventional attacks from Pakistan. During the 2019 India-Pakistan crisis, for example, India responded to a terror attack on its territory at Pulwama with a conventional air attack on Balakot in Pakistan. Speaking about the potential threat of Pakistani nuclear escalation in response to India's strike, Prime Minister Narendra Modi asked, "What do we have then? Have we kept our nuclear bombs for Diwali (the festival of lights)?"⁶

In May 2025, when India and Pakistan fought a near-war conflict for four days, it became clear that both sides believe that they have carved out space under the nuclear umbrella to conduct conventional operations against each other. India now considers its new doctrine to be one of assured conventional response against sub-conventional terror attacks on its territory. After the conflict ended, Prime Minister Modi stated that New Delhi would not "tolerate any nuclear blackmail," affirming that sub-nuclear conventional operations against Pakistan might be the new normal.⁷

India is increasingly demonstrating that it has two different strategies for its two nuclear competitors, and New Delhi's nuclear strategy toward China has been considerably different. This is not surprising given that in this nuclear dyad, India is at the weaker end of conventional military asymmetry. Recent border skirmishes between the two states along the LAC in the Himalayas have led to territorial and military losses for India. Since the violent clashes in the Galwan Valley in June 2020, New Delhi has lost at least

1 Hans M. Kristensen, Matt Korda, and Eliana Johns, "Pakistan Nuclear Weapons, 2023," *Bulletin of the Atomic Scientists* 79, no. 5 (September 3, 2023): 329–45, <https://doi.org/10.1080/00963402.2023.2245260>.

2 Carnegie Endowment for International Peace, "A Conversation with Gen. Khalid Kidwai," March 23, 2015, <https://carnegieendowment.org/files/03-230315carnegieKIDWAI.pdf>.

3 Sitara Noor, "Did Pakistan Just Overhaul Its Nuclear Doctrine?," *Foreign Policy*, September 16, 2024, <https://foreignpolicy.com/2023/06/19/pakistan-india-nuclear-weapons-zero-range-cold-start-doctrine/>.

4 Noor, "Did Pakistan Just Overhaul Its Nuclear Doctrine?"

5 Christopher Clary and Vipin Narang, "India's Counterforce Temptations: Strategic Dilemmas, Doctrine, and Capabilities," *International Security* 43, no. 3 (February 1, 2019): 7–52.

6 Narendra Modi, "Have We Kept Our Nuclear Bomb for Diwali, Asks Narendra Modi," *The Hindu*, April 21, 2019, <https://www.thehindu.com/elections/lok-sabha-2019/have-we-kept-our-nuclear-bomb-for-diwali-asks-narendra-modi/article26905408.ece>.

7 Nistula Hebbar, "PM Modi Address: India Won't Bend to Pakistan's Nuclear Blackmail; Operation Sindoor Is Still On," *The Hindu*, May 12, 2025, <https://www.thehindu.com/news/national/india-will-not-tolerate-any-nuclear-blackmail-pm-modi/article69568386.ece>.

twenty army troops in combat against the Chinese People's Liberation Army (PLA) forces, and has lost access to twenty-six of sixty-five patrolling points in Eastern Ladakh.⁸

Sino-Indian skirmishes along the LAC have continued intermittently since 2020, with the last major one in December 2022.⁹ Despite India's military reinforcements at the LAC—with 50,000 additional troops deployed at the border since 2020—and plans to raise a new mountain division aimed at China, skirmishes continue to take place.¹⁰

To tackle the conventional military asymmetry against China, India is raising a new Integrated Rocket Force (IRF) aimed at creating space for conventional escalation against China.¹¹ The IRF will be a conventional missile force with short- and long-range cruise and ballistic missiles, and India's newly developed Pralay short-range (150–500km) ballistic missile is expected to be the mainstay of this force.¹² Using a rocket force dedicated to conventional military action will likely allow India space to militarily engage the PLA along the LAC without escalation to the nuclear level. This room for conventional escalation has become increasingly important given China's building of critical military infrastructure along the LAC, including a motorable bridge over Pangong Tso Lake, underground bunkers, and hardened shelters for armored vehicles.¹³ Opening this space for conventional action by India will be central to its ability to deter and counter greater Chinese military action.

Key to this strategy is that both India and China have stated NFU policies. These policies have led to an expectation that any Sino-Indian confrontation at the conventional level would remain nonnuclear—assuming both sides conform to their stated nuclear

doctrines. Scholars now doubt, however, whether either India or China would conform to their NFU pledges in time of war or crisis.¹⁴ India's development of nuclear delivery capability suggests a hedging strategy that is aimed at maintaining strategic stability, continuing its overt commitment to its NFU pledge, and increasing its options to strike China if and when necessary.

India's recent nuclear modernization has increased its ability to target China's mainland; its Agni-V intermediate-range ballistic missile (IRBM) has a stated range of 5,000 kilometers.¹⁵ In March 2024, New Delhi successfully tested MIRV (multiple independently targetable reentry vehicles) technology on an Agni-V missile. This technology is aimed at bolstering India's second-strike capability, and intended to hold Chinese cities at risk with an increased ability to penetrate Beijing's missile defenses.¹⁶ India's developing MIRV capability is designed, therefore, to establish a secure mutual nuclear vulnerability with China. This approach will help its IRF operate at the conventional military level—an expected solidification of strategic stability that will thus create space for conventional crisis escalation.¹⁷

Proliferation Cascade: From the Indo-Pacific to Southern Asia

The United States' focus on competition with China in the Indo-Pacific has directly impacted nuclear stability in South Asia. While scholars previously suggested that a “strategic chain” connects Pakistan, India, China, and the United States, the relationship between these states today reflects more of a cascade

8 Vijaita Singh and Dinakar Peri, "India Has Lost Access to 26 out of 65 Patrolling Points in Eastern Ladakh, Says Research Paper," *The Hindu*, January 24, 2023, <https://www.thehindu.com/news/national/india-has-lost-access-to-26-out-of-65-patrolling-points-in-eastern-ladakh-says-research-paper/article66428193.ece>.

9 Sameer Lalwani, Daniel Markey, and Vikram Singh, "Another Clash on the India-China Border Underscores Risks of Militarization," United States Institute of Peace, December 20, 2022, <https://www.usip.org/publications/2022/12/another-clash-india-china-border-underscores-risks-militarization>.

10 Amrita Nayak Dutta, "Eye on Eastern Ladakh, New Army Division Likely to Be Raised This Year," *The Indian Express*, April 14, 2024, <https://indianexpress.com/article/india/eye-on-eastern-ladakh-new-army-division-likely-to-be-raised-this-year-9268541/>.

11 Pradip Sagar, "How Indian Military Is Planning 'Rocket Force' to Counter China's Aggression," *India Today*, April 18, 2023, <https://www.indiatoday.in/india-today-insight/story/how-indian-military-is-planning-rocket-force-to-counter-chinas-aggression-2361607-2023-04-18>.

12 Pradip Sagar, "How Indian Military Is Planning 'Rocket Force' to Counter China's Aggression."

13 Rezaul H. Laskar, "Images Show Chinese Bridge Across Pangong Lake in Use," *Hindustan Times*, July 30, 2024, <https://www.hindustantimes.com/india-news/images-show-chinese-bridge-across-pangong-lake-in-use-101722279544093.html>.

14 Caitlin Talmadge, Lisa Michelini, and Vipin Narang, "When Actions Speak Louder than Words: Adversary Perceptions of Nuclear No-First-Use Pledges," *International Security* 48, no. 4 (April 1, 2024): 7–46, https://doi.org/10.1162/isec_a_00482.

15 Press Trust of India, "India Test-Fires Agni-V Ballistic Missile Having Range of 5,000 Km," *The Wire*, December 15, 2022, <https://thewire.in/security/india-test-fires-agni-v-ballistic-missile-having-range-of-5000-km>.

16 Antoine Levesques, "India Shows Its Deterrent Holds Chinese Cities at Risk," International Institute for Strategic Studies, April 22, 2024, <https://www.iiss.org/en/online-analysis/missile-dialogue-initiative/2024/04/india-shows-its-deterrent-holds-chinese-cities-at-risk/>.

17 Debak Das, "How India's Restructured Rocket Force Makes Conflict with China More Likely," *Bulletin of the Atomic Scientists*, April 22, 2024, <https://thebulletin.org/2024/04/how-indias-restructured-rocket-force-makes-conflict-with-china-more-likely/>.

of reactionary vertical proliferation.¹⁸ This dynamic is distinct from the Cold War-era nuclear arms race between the United States and the Soviet Union, and is closer to a system of “spillover effects” from the nuclear modernization of one state to another.¹⁹ Indeed, it not clear that any of these states is aiming to attain nuclear superiority over the other. Rather, each is attempting to mitigate nuclear asymmetry and keep up with the force modernization of its adversaries.

This cascade has, at its start, the United States, which is currently modernizing its nuclear arsenal to address the two-peer nuclear threat posed by Russia and China.²⁰ Next, China is increasing its nuclear forces and building new intercontinental ballistic missile (ICBM) silos and nuclear submarines, seeking to address its nuclear asymmetry with the United States. Meanwhile, India’s increasingly hostile relationship with China has led it to focus its nuclear modernization efforts to address its increasing asymmetry with Beijing’s nuclear forces. Finally, India’s qualitative and quantitative improvements to its nuclear forces are increasing perceptions of nuclear asymmetry with Pakistan, leading to Pakistan’s nuclear force modernization and diversification in response.

In 2024, the United States announced that it has a stockpile of 3,748 nuclear warheads.²¹ Additionally, the US is conducting a wide-ranging nuclear modernization program that includes new warhead designs and weapon types.²² Competing with China is emerging as a critical pillar of the United States’ nuclear strategy. More than 60 percent of the United States’ ballistic missile submarine patrols occur in the Pacific and are aimed against China and North Korea.²³ Further-

more, the United States’ 2023 bipartisan Strategic Posture Commission recommended that Washington increase the size and scope of its nuclear arsenal to “address the possibility that China will field large-scale, counterforce-capable missile forces that pose a threat to US strategic nuclear forces on par with the threat Russia poses to those forces today.”²⁴

Suggestions of an expanded US strategic and tactical nuclear arsenal, along with wide-ranging advancements in missile-defense capability, have had an effect on China, which has responded to the United States’ strategic posture by significantly expanding its own nuclear forces.²⁵ A recent report shows that Beijing is in the process of building about 350 new ballistic missile silos alongside numerous new strategic nuclear delivery systems.²⁶ The total number of Chinese missile brigades has also increased. Beijing’s expanding silo-based ICBM force will increase its second-strike retaliatory capability, and China is expected to possess around 1,000 warheads by 2030.²⁷ Additionally, China is developing more advanced nuclear-powered ballistic missile submarines (SSBNs), submarine-launched ballistic missiles (SLBMs), and road- and rail-mobile ICBM systems, and has already deployed MIRVs on its ballistic missiles.²⁸ According to military and diplomatic officials in Washington, this expansion of Chinese nuclear and missile arsenals might be with a view toward seeking qualitative and quantitative parity with the United States.²⁹ From Beijing’s perspective, these developments are a result of the United States’ overt characterization of its relationship with China as one of “competition.”³⁰ For the immediate future, as China aims to keep up in its competition with the

18 Robert Einhorn and W. P. S. Sidhu, “The Strategic Chain: Linking Pakistan, India, China, and the United States,” Arms Control and Proliferation Series, The Brookings Institution, March 2017, <https://www.brookings.edu/articles/the-strategic-chain-linking-pakistan-india-china-and-the-united-states/>.

19 Toby Dalton, “Plus Ça Change? Prospects of a Nuclear Deterrence Multipolarity in Southern Asia,” *Journal for Peace and Nuclear Disarmament* 5, no. 2 (July 3, 2022): 250, <https://doi.org/10.1080/25751654.2022.2158702>.

20 C. Todd Lopez, “With Two Nuclear-Armed Strategic Competitors, US Modernization Top Priority,” US Department of Defense, September 18, 2024, <https://www.defense.gov/News/News-Stories/Article/Article/3910495/with-2-nuclear-armed-strategic-competitors-us-modernization-top-priority/>.

21 National Nuclear Security Administration, “Transparency in the US Nuclear Weapons Stockpile,” July 22, 2024, https://www.energy.gov/sites/default/files/2024-08/U.S.%20Nuclear%20Weapons%20Stockpile%20Transparency%207_22_24.pdf.

22 Hans M. Kristensen et al., “United States Nuclear Weapons, 2024,” *Bulletin of the Atomic Scientists* 80, no. 3 (2024): 182–208, <https://doi.org/10.1080/00963402.2024.2339170>.

23 Kristensen et al., “United States Nuclear Weapons, 2024,” 194.

24 Strategic Posture Commission, “America’s Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States,” October 2023, viii, <https://www.armed-services.senate.gov/download/americas-strategic-posture-the-final-report-of-the-congressional-commission-on-the-strategic-posture-of-the-united-states?download=1>.

25 Henrik Stålhane Hiim, M. Taylor Fravel, and Magnus Langset Trøan, “The Dynamics of an Entangled Security Dilemma: China’s Changing Nuclear Posture,” *International Security* 47, no. 4 (January 4, 2023): 147.

26 Hans M. Kristensen et al., “Chinese Nuclear Weapons, 2024,” *Bulletin of the Atomic Scientists* 80, no. 1 (January 2, 2024): 49–72.

27 Hiim, Fravel, and Trøan, “The Dynamics of an Entangled Security Dilemma,” 173.

28 Hiim, Fravel, and Trøan, “The Dynamics of an Entangled Security Dilemma,” 173–75.

29 Hiim, Fravel, and Trøan, “The Dynamics of an Entangled Security Dilemma,” 173–75.

30 Tong Zhao, “Political Drivers of China’s Changing Nuclear Policy: Implications for US-China Nuclear Relations and International Security,” *Carnegie Endowment for International Peace*, 72, <https://carnegieendowment.org/research/2024/07/china-nuclear-buildup-political-drivers-united-states-relationship-international-security?lang=en>.

United States, it is likely to continue with its nuclear force modernization and expansion.

China's nuclear and missile advancements have led to response from India. New Delhi's nuclear force development has been aimed toward addressing its asymmetry with China.³¹ With most of its deployed nuclear force already able to target all of Pakistan, India's next generation of nuclear force development is aimed at mitigating the threat from Beijing. Its Agni family of land-based IRBMs—soon to be armed with MIRV-ed and MaRV (maneuverable reentry vehicle) warheads—is aimed at targeting different parts of China. While there has been no official confirmation on the next version of the missile, Agni VI, this version is expected to have a range of between 9,000 and 12,000 kilometers, with a three-ton nuclear payload.³² Beyond the Chinese mainland, this missile will aim to give India the capacity to strike Chinese targets—aircraft carriers and SSBNs—in the central Pacific Ocean and the southern Indian Ocean.³³

In addition to increasing the capabilities of its land-based ballistic missiles, India is also increasing its sea-based nuclear capability, with the aim of having a more secure and dispersed second-strike capability against China and building up a greater naval footprint in the Indo-Pacific. In August 2024, the second SSBN of New Delhi's nuclear triad, the INS *Arighaat*, was commissioned, substantially increasing India's nuclear strike capacity.³⁴ Along with India's first SSBN—the INS *Arihant*—the *Arighaat* now forms a strategic naval force that will likely conduct regular deterrence patrols in the Indo-Pacific. India is building three more SSBNs that will be larger than the first two.³⁵ Currently, India's two SSBNs are armed with the K-15 Sagarika SLBMs, which have a range of 750 kilometers, a short range that severely limits India's ability to strike China from the sea. To address this problem, India's next two SSBNs will be armed with the K-4 SLBMs, with a striking

range of 3,500 kilometers, and the yet-unnamed fifth SSBN is expected to carry the 5,000-kilometer-range K-5 SLBM.³⁶

Finally, India's nuclear force modernization and expansion of its nuclear forces has led to vertical proliferation in Pakistan. Pakistan is developing new delivery vehicles with the goal of seeking parity with India on the nuclear front, and its fissile materials and weapons arsenal are expected to continue growing.³⁷ Its development of diverse delivery systems seeks to ensure that if India does abandon the NFU vis-à-vis Pakistan, it will not be able to conduct a “splendid” first strike (that is, a strike in which all of Pakistan's nuclear weapons are attacked, thus nullifying Islamabad's ability to strike back). Pakistan's building of road-mobile transporter erector launchers (TELs) and sea-launched cruise and ballistic missiles is aimed at dispersing its nuclear force to counter any such possibility.³⁸

Additionally, in keeping with the dynamic of creating space for low-scale nuclear escalation to deter conventional attacks as a part of its full-spectrum deterrence strategy, Pakistan has developed ground-, air-, and sea-launched nuclear-capable short-range cruise missiles.³⁹ Islamabad has also deployed tactical nuclear weapons (TNWs) in the form of the 60-kilometer-range Hatf IX Nasr ballistic missile. Pakistan's TNWs have been developed to counter India's “Cold Start” doctrine, which aimed to conduct proactive conventional military operations on Pakistani territory in response to sub-conventional attacks on Indian territory.⁴⁰ Through both its nuclear doctrine and its development of advanced nuclear-delivery systems, Pakistan has sought to ensure that it is able to compete with India's nuclear abilities, even if those capabilities may now be driven primarily by China's actions.

This cascade of proliferation results directly from the United States' competition with China. The more Washington centers the Indo-Pacific in its nuclear

31 Debak Das, “The State of Nuclear Instability in South Asia: India, Pakistan, and China,” *Lawfare*, September 3, 2023, <https://www.lawfaremedia.org/article/the-state-of-nuclear-instability-in-south-asia-india-pakistan-and-china>.

32 Amartya Sinha, “How Nuclear Capable Agni-VI Missile Will Be a Force-Multiplier for India,” *India Today*, August 29, 2023, <https://www.indiatoday.in/india/story/agni-vi-missile-nuclear-capable-force-multiplier-for-india-2428231-2023-08-29>; Girish Linganna, “Agni VI, ISRO and Radio Silence on India's 10,000 KM Range ICBM,” *Financial Express*, November 17, 2022, <https://www.financialexpress.com/business/defence-agni-vi-isro-and-radio-silence-on-indias-10000-km-range-icbm-2828572/>.

33 Sinha, “How Nuclear Capable Agni-VI Missile Will Be a Force-Multiplier for India.”

34 Amrita Nayak Dutta, “INS Arighaat Commissioned: Why a Second Nuclear Submarine Matters for India,” *The Indian Express*, August 30, 2024, <https://indianexpress.com/article/explained/ins-arighaat-commissioned-nuclear-sub-importance-9541813/>.

35 Abhijit Singh, “Arighat Commissioning Revives Debate over ‘No First Use’ Policy,” Observer Research Foundation, September 2, 2024, <https://www.orfonline.org/research/arighat-commissioning-revives-debate-over-no-first-use-policy>.

36 Singh, “Arighat Commissioning Revives Debate over ‘No First Use’ Policy.”

37 Hans M. Kristensen and Matt Korda, “World Nuclear Forces,” in *SIPRI Yearbook 2024: Armaments, Disarmament and International Security* (Stockholm, 2024), 332.

38 Kristensen, Korda, and Johns, “Pakistan Nuclear Weapons, 2023.”

39 Kristensen and Korda, “World Nuclear Forces,” 337.

40 Mansoor Ahmed, “Pakistan's Tactical Nuclear Weapons and Their Impact on Stability,” Carnegie Endowment for International Peace, June 30, 2016, <https://carnegieendowment.org/research/2016/06/pakistans-tactical-nuclear-weapons-and-their-impact-on-stability>.

strategy, the more downstream effects there will likely be on other nuclear states, whether they are either directly in competition with the United States or with a rival that is also impacted by US nuclear strategy.

AUKUS and the Nuclearization of the Indo-Pacific

The United States has significant direct and indirect effects on the proliferation of nuclear and missile systems across the Indo-Pacific. Its AUKUS deal with the United Kingdom and Australia will give Canberra conventionally armed nuclear-powered attack submarines (SSNs) in service of a “free and open” Indo-Pacific. While Pillar One of AUKUS deals with nuclear submarines, Pillar Two provides for the United States to share key technology (related to hypersonic missiles, electronic warfare, artificial intelligence, and advanced cyber capabilities) with its allies.⁴¹ This technology sharing, motivated by strategic competition with China, may lead to several downstream effects that are likely to intensify the risks of naval competition and proliferation in the Indo-Pacific and Southern Asia.

Consistent with the cascade dynamic, China will feel pressure to respond to AUKUS. Its Foreign Ministry has described the deal as a “wrong and dangerous path” that will “only motivate an arms race, damage the international nuclear nonproliferation regime, and harm regional stability and peace.”⁴² Of course, the AUKUS deal by itself will not lead to these outcomes. But China’s response to AUKUS likely will. Beijing’s new SSBNs—especially the Type 096—have made considerable qualitative technical advancements that make them a formidable change in the Indo-Pacific.⁴³ A proliferation of United States, United Kingdom, and Australian SSNs because of AUKUS in the Indo-Pacific might put China’s six-boat SSBN force—and its second-strike capability—at risk. This dynamic could lead to a considerable increase in the number of Chinese SSNs and SSBNs developed over the next few years—a development that would, in turn, likely impact India’s projected SSBN and SSN force.

India’s commitment to the Indo-Pacific primarily focuses on its side of the western Indian Ocean and South Asia. However, it has a long-standing commitment to keeping the sea lines of communication free and open from the Gulf of Aden to the Straits of Malacca. Increased militarization of the Indo-Pacific via proliferation of nuclear submarines and other naval deployments by China—even if simply a response to AUKUS—will prompt India to develop its own naval capacity, and particularly, to consider an increase in its nuclear submarine force, specifically SSNs. Currently, India builds its own SSBNs but has leased out *Akula*-class SSNs from Russia intermittently since 1987. India plans on inducting one such leased SSN into its fleet by 2028 and is reportedly considering leasing a second submarine from Moscow as well.⁴⁴ In addition, in 2024, India announced that it has started a program to build its own indigenous SSNs. The first of these submarines is expected to be deployed by 2037 and will, crucially, lead to increased Indian independence in the field of naval force projection.⁴⁵

Once all five of India’s planned *Arihant*-class SSBNs are deployed and India moves toward a continuous-at-sea deterrence posture—as other navies with a similar force structure have—there will be a broader question of how this force operates and interacts with China’s nuclear submarines and forces in a nuclear-crowded Indo-Pacific. Will the QUAD grouping (which includes India, Japan, Australia, and United States) coordinate their naval strategies and SSN deployments in the Indo-Pacific? How will the United States and its allies view India’s use of leased-out Russian *Akula* submarines in the region?

Finally, an increased Indian naval force with nuclear submarines—both SSNs and SSBNs—is likely to threaten Pakistan’s access to and freedom of navigation in the Arabian Sea and Indian Ocean. Islamabad has been developing the sea-leg of its nuclear forces and has developed a nuclear-capable Babur sea-launched cruise missile (SLCM) with a range of 450 kilometers to be deployed on its diesel-powered Agosta 90B submarines.⁴⁶ An increase in India’s submarine forces

41 John Christianson, Sean Monaghan, and Di Cooke, “AUKUS Pillar Two: Advancing the Capabilities of the United States, United Kingdom, and Australia,” CSIS Briefs, Center for Strategic & International Studies, July 10, 2023, <https://www.csis.org/analysis/aukus-pillar-two-advancing-capabilities-united-states-united-kingdom-and-australia>.

42 “China Says AUKUS on ‘Dangerous Path’ with Nuclear Subs Deal,” AP News, March 14, 2023, <https://apnews.com/article/china-aukus-nuclear-submarines-f6ecf854646e2dbdd6ebee2f2e971d>.

43 Christopher P. Carlson and Howard Wang, “A Brief Technical History of PLAN Nuclear Submarines,” China Maritime Report, China Maritime Studies Institute, US Naval War College, August 2023, https://digital-commons.usnwc.edu/cmsi-maritime-reports/30?utm_source=digital-commons.usnwc.edu%2Fcmsi-maritime-reports%2F30&utm_medium=PDF&utm_campaign=PDFCoverPages.

44 Sandeep Unnithan, “Why India Could Be Leasing a Second Nuclear Powered Attack Submarine from Russia,” *India Today*, September 5, 2021, <https://www.indiatoday.in/india-today-insight/story/why-india-is-leasing-a-second-nuclear-powered-attack-submarine-from-russia-1849277-2021-09-04>.

45 Dinakar Peri, “Indigenous Nuclear Attack Submarine Design to Take 4–5 Years, Another Five Years for Construction,” *The Hindu*, December 7, 2024, <https://www.thehindu.com/news/national/indigenous-nuclear-attack-submarine-design-to-take-4-5-years-another-five-years-for-construction/article68959614.ece>.

46 Shervin Taheran, “Pakistan Advances Sea Leg of Triad,” Arms Control Association, 2018, <https://www.armscontrol.org/act/2018-06/news-briefs/pakistan-advances-sea-leg-triad>.

may prompt Pakistan to consider increasing its naval forces as well. Importantly, the AUKUS deal has set a precedent for China to lease or sell nuclear-powered attack submarines to Pakistan if both states decide to pursue that path. Given Beijing and Islamabad's long history of nuclear and missile cooperation—and common interest in checking India—this scenario could become more likely.

The United States needs to consider the downstream consequences of its Indo-Pacific nuclear strategy. Introducing more nuclear-powered submarines through other states and potentially deploying nuclear-armed cruise missiles on its own SSNs to enhance its ability to use tactical nuclear weapons in the Indo-Pacific will generate responses from its immediate nuclear competitors, whose responses will have their own effects on others.⁴⁷ This scenario might continue—and exacerbate—proliferation and modernization cascades across the Indo-Pacific region.

Conclusion

Analysts suggest that the Indo-Pacific is “at the cusp of a new missile age, driven by perceptions of rising insecurity.”⁴⁸ If this is true, then the dynamics leading to this insecurity must be understood. There are three main drivers of proliferation and insecurity in South Asia and the Indo-Pacific: the dynamic of creating spaces of escalation under the shadow of nuclear weapons; proliferation cascades resulting from great power competition; and the risk of naval buildup precipitated by AUKUS.⁴⁹ Each of these drivers share underlying elements—reaction-driven vertical proliferation and modernization of nuclear weapons and their delivery systems—that amplify regional insecurity and must be addressed.

Thus far, competition has been the driving force behind United States–China tensions, intensifying the security dilemma between both states.⁵⁰ This dynamic is now generating spillover effects in other regions, like South Asia. From the United States' per-

spective, then, deemphasizing the nuclear aspect of its competition with China in the Indo-Pacific could have a stabilizing effect on the unfolding regional cascade of proliferation.

Central to nuclear delivery-system proliferation and modernization is the question of nuclear posture. The expansion of nuclear delivery systems in both China and India—with varying ranges, payloads, and accuracies—suggests that these states are reducing the threshold for the potential use of nuclear weapons and might each be tempted to abandon their NFU policies in the future.⁵¹ Scholars have suggested that NFU policies might not hold much weight anyway—that is, they are “cheap talk” when it comes to a war or nuclear crisis.⁵² So far, however, both China's and India's NFU policies have had greater weight because they are coupled with nuclear postures characterized by a lack of numerical and qualitative capacity to strike their adversaries first. These capacities are now changing, such that both China and India might possess first-strike capability soon. This development may tempt both states to abandon their NFU policies. If more first-use-oriented weapon systems are introduced in the Indo-Pacific, rather than states simply shoring up their second-strike capabilities, we might see more of a Cold War-type arms race dynamic among the region's nuclear weapons states.

Finally, given the proliferation of missile systems and nuclear submarines, there is growing risk of serious accidents and inadvertent escalation. During the Cold War, nuclear missile submarines collided with each other in the ocean, sometimes significantly damaging each other.⁵³ More recently, in 2009, two nuclear-armed SSBNs—the British *HMS Vanguard* and the French *Le Triomphant*—collided deep in the Atlantic Ocean.⁵⁴ A greater number of SSNs and SSBNs in the Indo-Pacific will only raise the likelihood of such accidents. On the missile front, in 2022, India accidentally fired a supersonic BrahMos cruise missile into Pakistan.⁵⁵ The missile was not armed, and a major escalation was averted, but the

47 Gabriel Honrada, “US Mulls Nuke Cruise Missiles on Subs to Deter China,” *Asia Times*, May 28, 2024, <http://asiatimes.com/2024/05/us-mulls-uke-cruise-missiles-on-subs-to-deter-china/>.

48 Ankit Panda, *Indo-Pacific Missile Arsenals: Avoiding Spirals and Mitigating Escalation Risks* (Carnegie Endowment for International Peace, 2023), 1.

49 This article focused on the strategic threats that are driving force modernization in South Asia, but other preexisting political factors like domestic politics and bureaucratic bargaining also play a role.

50 Lili Pike, “How Does the US-China ‘Cold War’ End?” *Foreign Policy*, September 24, 2024, <https://foreignpolicy.com/2024/09/19/republican-gop-china-policy-cold-war-regime-change-competition/>.

51 Clary and Narang, “India's Counterforce Temptations.”

52 Talmadge, Michelini, and Narang, “When Actions Speak Louder than Words.”

53 “CIA Memo Confirms Nuclear Sub Crash,” BBC News, January 25, 2017, <https://www.bbc.com/news/uk-scotland-38744322>.

54 Richard Norton-Taylor, “Two Subs, Dozens of Nuclear Warheads, One Huge Ocean—and a Stroke of Bad Luck,” *The Guardian*, February 17, 2009, <https://www.theguardian.com/uk/2009/feb/17/nuclear-submarine-collision>.

55 Snehesh Alex Philip, “Accidentally Fired Missile into Pakistan due to Tech Glitch, Says India. ‘It Was BrahMos,’” *The Print*, March 11, 2022, <https://theprint.in/defence/accidentally-fired-missile-into-pakistan-due-to-tech-glitch-says-india-it-was-brahmos/869387/>.



incident highlighted the risks of inadvertent escalation among nuclear adversaries, emphasizing the need to have better missile safety management and crisis communication. Widespread missile proliferation in the Indo-Pacific and South Asia is therefore another area where mechanisms will be needed to mitigate the risks of rising insecurity. ●

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MENA at the Threshold? Proliferation Risks and Great Power Competition

Nicole Grajewski and Jane Darby Menton

This article situates the Middle East and North Africa (MENA) in the global nuclear order, emphasizing how the region has both challenged and spurred adaptations in international nuclear governance for decades. It then examines two pressing contemporary issues: the uncertain trajectory of Iran's nuclear program after Israeli and US military strikes in June 2025, and the anticipated expansion of nuclear energy across MENA, which could also result in more countries with capabilities that would be conducive to pursuing the bomb. Both developments underscore the difficulties of managing nuclear latency in a conflict-prone region, where tensions among local actors inflect nuclear decision-making. While there are opportunities to mitigate these challenges, and principles that policymakers should follow in addressing them, nuclear aspirations are likely to remain a prominent feature of MENA's security landscape so long as underlying tensions between regional actors remain unresolved.

The Middle East and North Africa (MENA) occupy a unique and volatile position within the global nuclear order. At the heart of this dynamic lies a long history of challenges to international nuclear governance, coupled with Israel's status as the region's sole nuclear-armed state and the only MENA country that operates outside the Nuclear Non-Proliferation Treaty (NPT), a position that has both resulted from and contributed to the region's pervasive security dilemmas. Israel's undeclared arsenal; proliferation attempts in states including Iran, Iraq, Libya, and Syria; and regional counterproliferation practices, including kinetic attacks on nuclear infrastructure, have fueled insecurity and motivated latent nuclear ambitions across MENA for generations.

Today, the region faces two nuclear challenges that demand urgent attention from policymakers and scholars alike. First, as this article goes to press in early July 2025, the long-simmering Iranian nuclear crisis appears to be at an inflection point. For years, Iran has been a "threshold state," meaning that it would be

capable of building nuclear weapons relatively quickly if it chose to do so. Efforts to contain the program diplomatically stalled after the United States withdrew from the Joint Comprehensive Plan of Action (JCPOA) in 2018, although talks resumed during the Biden and second Trump administrations. In June 2025, Israel invoked the long-discussed "military option," nominally to prevent Iran from obtaining the bomb, while talks between Washington and Tehran were still ongoing. In addition to striking nuclear sites and personnel, Israel eliminated swaths of the country's military leadership and targeted Iran's ballistic missile program, government institutions, and critical infrastructure. On June 21, the United States also intervened with targeted strikes on Iranian nuclear facilities in Natanz, Isfahan, and Fordow.

The military and political effects of these events are still unfolding, with profound implications for the nuclear landscape in MENA. Key questions include the extent to which kinetic counterproliferation has set back Iran's nuclear capabilities; whether Iranian leaders will dismantle their remaining infrastructure

or doggedly pursue weaponization; and whether the international community can confidently assess that Iran is not covertly reconstituting a nuclear weapons program in the years to come. The reactions of other regional powers will also be important; for example, if Iran crosses the nuclear threshold, Saudi Arabia has vowed to follow suit.

These risks and uncertainties play out against the backdrop of a second challenge, which, while less acute, has implications for regional and global nuclear governance. In recent years, MENA has become a bellwether for the opportunities and complexities of peaceful nuclear cooperation in a period of renewed great power competition. As demand for nuclear energy is increasing globally, countries like the United Arab Emirates, Egypt, and Saudi Arabia are already advancing nuclear energy initiatives that feature varying degrees of transparency and commitment to international safeguards. Competition among US, Russian, and Chinese nuclear suppliers for contracts and influence in MENA will impact the rules and norms that govern the transfer of nuclear technologies worldwide.

The long saga of Iran's nuclear program and the expected growth of nuclear capacity across MENA underscore the difficulties of managing nuclear latency in a conflict-prone region, where nuclear aspirations are deeply implicated in tensions among local actors. The region's history of attempted and (mostly) thwarted proliferation has shaped the global nuclear order and how those within MENA perceive the norms and institutions that comprise it. This fraught legacy, including the mix of diplomacy and coercive efforts to contain Iran's nuclear program, continues to inflect the landscape today, as the uptick in civilian nuclear projects across MENA interacts with gaps in nuclear governance and rising competition among the major nuclear powers in ways that could deepen existing fault lines and contribute to future proliferation crises. While there are opportunities to mitigate these challenges, policies designed to resolve specific issues are unlikely to endure if dynamics that drive fissures within the region and skepticism toward the global nonproliferation regime remain unaddressed.

MENA and the Nuclear Order

The MENA region serves as a microcosm of tensions within the global nuclear order, highlighting

the challenges and adaptations of nuclear governance and the inconsistent application and diffusion of international norms. MENA is distinguished by the lack of universality in NPT membership, an extensive history of clandestine nuclear weapons programs, and uneven implementation of global rules. At the same time, efforts to resolve proliferation crises in the Middle East have spurred innovations in counterproliferation, including the use of military strikes and covert sabotage operations to degrade concerning programs, as well as novel approaches to safeguards, sanctions, monitoring and verification, and multilateral diplomacy.

At least for now, Israel remains the only regional actor to successfully cross the nuclear threshold. It allegedly developed nuclear weapons during the 1950s and 60s, motivated by a perceived existential threat from neighboring Arab states and the desire to deter large-scale conventional attacks.¹ Israel's nuclear arsenal has influenced the way other MENA countries interact with the global nuclear order. Although Israel maintains a policy of deliberate opacity about its nuclear capabilities, their existence is an open secret, and many regional actors view the international community's tacit acceptance as a glaring double standard. That said, despite Israel's abstention, every other MENA state is now a member of the NPT. The dearth of trust among regional actors has made them more reliant on international regimes and institutions to manage nuclear issues, although compliance has been marred by haphazard implementation and violations of varying severity.² Tensions among MENA states have also undermined efforts to develop collective security arrangements that could underpin a more cohesive approach to nonproliferation and nuclear governance at the regional level.³

Outside of Israel, multiple MENA states have explored the nuclear weapons option, with different degrees of intensity and success. For example, Egypt pursued nuclear weapons in the 1960s, but technical challenges and leadership ambivalence led to a shift in focus under President Anwar Sadat, culminating in NPT ratification in 1981.⁴ Iraq has been an NPT signatory since 1969, and though it came close to acquiring nuclear weapons under Saddam Hussein, its weapons program was effectively neutralized after the 1991 Gulf War. Libya spent decades secretly pursuing nuclear weapons, only to voluntarily dismantle its program in 2003 under international supervision. This development was initially seen as a success story, but many governments

1 Avner Cohen, *Israel and the Bomb* (Columbia University Press, 1998).

2 Mohammed Ayoob, "From Regional System to Regional Society: Exploring Key Variables in the Construction of Regional Order," *Australian Journal of International Affairs* 53, no. 3 (November 1, 1999): 247–60, <https://doi.org/10.1080/00049919993845>.

3 Farzan Sabet, "Narratives of the Middle East WMD-Free Zone: Drivers, Themes and Historical Accounts," UNIDIR, 2023, <https://doi.org/10.37559/MEWMDFZ/2023/narratives>.

4 Egypt also concluded a peace treaty with Israel during this period.

have interpreted Libyan disarmament as a cautionary tale since the fall of Muammar Qaddafi in 2011.⁵ Syria's nuclear ambitions, allegedly supported by North Korea, were halted by an Israeli airstrike in 2007.⁶

As these examples illustrate, regional tensions have spurred interest in nuclear weapons and injected volatility into nuclear crises. Prior to the war in Ukraine, "every known military attack on a nuclear installation" had taken place in the Middle East, most launched by other states in the region.⁷ A key actor in this domain has been Israel, which has consistently employed both overt and covert strategies to prevent the emergence of rival nuclear powers in MENA. Notable examples include the assassinations of Iraqi and Iranian nuclear scientists; cyberattacks such as the Stuxnet operation (likely conducted jointly with the United States) on Iran's nuclear infrastructure; and military strikes, including the 1981 destruction of Iraq's Osirak reactor and the 2007 bombing of Syria's suspected plutonium-producing facility at Deir ez-Zor. Nuclear installations have also come under fire during conventional wars, most notably when Iraq attacked Iran's nuclear facilities in the 1980–88 Iran-Iraq War.

Yet if there is ample precedent for using military force against nuclear infrastructure in MENA, the legacy of these efforts is somewhat mixed. Counterproliferation operations against Syria are generally viewed as a success story, while the Israeli strike on Iraq's Osirak reactor both set the program back and encouraged Baghdad to pursue proliferation pathways that would be harder to detect. The full scope of Iraq's reconstituted program only became apparent ten years later, after its defeat in the First Gulf War.⁸

Although militarized counterproliferation tends to attract more attention, past failures to detect covert nuclear weapons programs in MENA have also catalyzed significant reforms to the global nonproliferation architecture, creating new tools to apprehend and reverse illicit weapons programs. For example,

the revelation of Iraq's clandestine nuclear program contributed to the development of the Additional Protocol (AP), a critical evolution in safeguards implementation, which has enhanced the capacity of the International Atomic Energy Agency (IAEA) to detect and deter undeclared nuclear activities.⁹ The First Gulf War also set the precedent for using multilateral sanctions as both carrot and stick in the context of nonproliferation.¹⁰ UN Security Council sanctions played a role in subsequent efforts to manage North Korea's and Iran's nuclear programs.

These developments have not eliminated the risk of secret nuclear weapons programs. Small enrichment and reprocessing facilities remain difficult to detect, and activities associated with weaponization are even harder to perceive.¹¹ The efficacy of enhanced safeguards measures is also contingent upon their universal implementation, a goal that remains elusive in MENA. In some cases, the discovery of covert nuclear activities has advanced efforts to institutionalize nonproliferation norms. For example, in the early 1990s, Algeria—facing pressure from the United States and China—agreed to join the NPT and place a suspicious reactor at Ain Oussera under IAEA safeguards.¹²

Overall, however, regional nuclear dynamics reflect both a reliance on external security guarantees and resistance to external interference. While the UAE has embraced the "gold standard" of nonproliferation—implementing the Additional Protocol and renouncing enrichment and reprocessing (activities that could also produce fissile material for nuclear weapons)—other states remain reluctant. Iran suspended implementation of the AP in 2006 and again in 2021, and Egypt, Syria, and Saudi Arabia have all refused to adopt it or to forgo the option to develop sensitive nuclear technologies.¹³ This uneven approach to safeguards leaves some states with the latitude to pursue nuclear capabilities that could be redirected toward military ends.

5 Malfrid Braut-Hegghammer, *Unclear Physics: Why Iraq and Libya Failed to Build Nuclear Weapons* (Cornell University Press, 2016).

6 Oliver Holmes, "Israel Confirms It Carried Out 2007 Airstrike on Syrian Nuclear Reactor," *The Guardian* (March 21, 2018).

7 Martin B. Malin, "Nuclear Energy in the Middle East? Regional Security Cooperation Needed," Belfer Center for Science and International Affairs, Spring 2017, <https://www.belfercenter.org/publication/nuclear-energy-middle-east-regional-security-cooperation-needed>.

8 Malfrid Braut-Hegghammer, "Revisiting Osirak: Preventive Attacks and Nuclear Proliferation Risks," *International Security* 36, no. 1 (July 2011): 101–32, https://doi.org/10.1162/ISEC_a_00046; Malfrid Braut-Hegghammer, "Cheater's Dilemma: Iraq, Weapons of Mass Destruction, and the Path to War," *International Security* 45, no. 1 (July 1, 2020): 51–89, https://doi.org/10.1162/isec_a_00382.

9 Laura Rockwood, "Evaluation of the Impact of the Model Additional Protocol on Non-Nuclear Weapon States with Comprehensive Safeguards Agreements," Swedish Radiation Safety Authority, 2018, <https://vcdnp.org/wp-content/uploads/2018/10/201823-evaluation-of-the-impact-of-the-model-additional-protocol-on-non-nuclear-weapon-states-with-comprehensive-safeguards-agreements.pdf>.

10 "Iraq: A Chronology of UM Inspections," *Arms Control Today*, 2002, <https://www.armscontrol.org/act/2002-10/features/iraq-chronology-un-inspections>; Kelsey Davenport, "UN Security Council Resolutions on North Korea," Arms Control Association, January 2022, <https://www.armscontrol.org/factsheets/un-security-council-resolutions-north-korea>.

11 R. Scott Kemp, "The Nonproliferation Emperor Has No Clothes: The Gas Centrifuge, Supply-Side Controls, and the Future of Nuclear Proliferation," *International Security* 38, no. 4 (Spring 2014): 39–78.

12 <https://nsarchive2.gwu.edu/nukevault/ebb228/index.htm>.

13 It resumed implementation under the JCPOA, but suspended it again in 2021, as part of an escalating campaign of noncompliance, following US withdrawal from the agreement.

Immediate proliferation risks in the Middle East—with the notable exception of Iran—appear to have declined in recent decades. The current configurations of nuclear infrastructure in most MENA countries, which primarily consist of research reactors and nascent power programs, would not lend themselves to rapid weaponization.¹⁴ Moreover, the technical and political hurdles to weaponization, including the need to expel international inspectors or withdraw from the NPT, dissuade overt activities. That said, the long-term implications of safeguard gaps and weak regional institutionalization are potentially severe. Tensions among regional powers have long been drivers of proliferation, and deteriorating security conditions, prompted by developments in Iran or intensifying conventional conflict in the region, could make nuclear weapons more appealing, or frustrate efforts to arrest potential proliferation cascades.

Iran's Threshold Status and the Looming Threat of Weaponization

The most acute proliferation risk in MENA today is Iran. The history of Iran's program exemplifies the trend lines and fault lines that define the region's nuclear landscape. Once emblematic of so-called rogue states with clandestine nuclear ambitions, Iran subsequently evolved into a threshold state. Efforts to prevent Iran from crossing that threshold have spurred innovative approaches to both diplomacy and coercion for decades. The trajectory of Tehran's program following military escalation between Iran and Israel as well as US counterproliferation strikes will have significant ramifications for regional stability and MENA's nuclear landscape.

Iran's nuclear program began during the 1950s. Although progress stalled after the 1979 revolution, Tehran embarked on a covert nuclear weapons program in the late 1980s, which remained hidden until the early 2000s. According to US intelligence assessments, Iran suspended its dedicated weaponization program in 2003.¹⁵ By that point, however, it had made significant progress. Initially, Iran lacked the necessary fissile material to build a bomb, but

it steadily addressed that shortfall by expanding uranium-enrichment capabilities semitransparently in subsequent years. After secret enrichment facilities at Natanz and Fordow were revealed in 2002 and 2009, respectively, Iran declared the sites to the IAEA and accepted safeguards. (The NPT does not ban enrichment in non-weapon states, but most countries have concluded it is not cost-efficient.) Although Iranian leaders have long insisted that their nuclear program is exclusively peaceful, estimates of the time it would take for Iran to produce enough highly enriched uranium (HEU) for its first nuclear weapon shrunk as its enrichment program advanced.

Past revelations about Iran's clandestine nuclear facilities, and concerns about its known activities, have triggered attempts to contain its nuclear ambitions, including sanctions, covert actions, and multilateral negotiations.¹⁶ In 2015, diplomatic efforts culminated in the Joint Comprehensive Plan of Action (JCPOA), which featured innovative trade-offs between sanctions relief and verifiable restrictions on nuclear activities, including caps on enrichment levels, significant reductions in enriched uranium stockpiles, and modifications to a reactor that would have been conducive to plutonium production. The JCPOA also required Iran to implement the AP and supplementary monitoring and verification measures that would make it harder to conceal illicit activities.

Although US intelligence assessed Iran to be complying with the agreement, the JCPOA, along with its restrictions and monitoring regime, unraveled after the Trump administration pulled out in 2018.¹⁷ After that, despite Washington's "maximum pressure" sanctions campaign, Tehran significantly advanced its nuclear program. Iran has developed and deployed advanced centrifuges, shrinking the time needed to actualize a decision to proliferate, and in 2021, it became the only nonnuclear weapon state enriching uranium to 60 percent, a short technical step away from weapons grade.¹⁸ Iran also curtailed IAEA monitoring capabilities, reducing international oversight of its obligations under both the JCPOA and its broader Comprehensive Safeguards Agreement.

Iran is not the only state to reach the nuclear threshold. For example, although Japan adheres to

14 Mark Fitzpatrick, ed., *Nuclear Programmes in the Middle East: In the Shadow of Iran*, (International Institute for Strategic Studies, 2008); Eric Brewer, "The Nuclear Proliferation Landscape: Is Past Prologue?," *The Washington Quarterly* 44, no. 2 (June 17, 2021): 181–97, <https://doi.org/10.1080/0163660X.2021.1934250>.

15 Annual Threat Assessment of the US Intelligence Community, Office of the Director of National Intelligence, March 2025, <https://www.dni.gov/files/ODNI/documents/assessments/ATA-2025-Unclassified-Report.pdf>.

16 For background on the JCPOA, see Muhammad Javad Zarif et al., *Rāz-i sar bih muhr: Barjām kūshish-i siturg barā-yi huqūq, amniyat va tawsa'ah-i Irān [The Nuclear Deal: The Untold Story of JCPOA: Protecting Iran's Security, Rights and Development]* (Tehran: Intishārāt-i Ittīlā'āt, 2021).

17 Majma'-e Tashkhis-e Maslahat-e Nezam, "Tavaquf-i ta'ahhudāt-i hastah' ī-i Irān, sināryūhā-yi mumkin va tahlil-i āyandah-i barjām [Suspension of Iran's Nuclear Commitments, Possible Scenarios and Analysis of the Future of the JCPOA]" (Dabīrkhānih-i Majma'-i Tashkhuṣ Maslahat-i Nizām, Pizhūhishkadah-i Tahqīqāt-i Rāhburdī, 2019).

18 <https://www.iaea.org/newscenter/statements/iaea-director-generals-introductory-statement-to-the-board-of-governors-4-march-2024>.



its 1967 nonnuclear principles, its vast stockpile of weapons-usable fissile material and development of missile capabilities that could be adapted for nuclear delivery provide it with the option to quickly assemble nuclear weapons.¹⁹ But Iran has presented a thornier challenge, due to the sophistication of its program, its checkered history with the IAEA, and the entanglement of its nuclear ambitions in volatile regional security dynamics. Iran has achieved several crucial steps toward nuclear weaponization, including research on the design and engineering of warheads (as evidenced by past activities), sophisticated delivery systems, and the establishment of the requisite command-and-control infrastructure, primarily within the Islamic Revolutionary Guard Corps (IRGC) Aerospace Force.

Iranian policymakers have also wielded their threshold status as a form of leverage, emphasizing that the only thing standing between them and the bomb is a political decision. As Ali Akbar Salehi, former head of Iran's Atomic Energy Organization, remarked in February 2024: "It's like having all the

parts to build a car: we have the chassis, the engine, the transmission, everything."²⁰ Iranian leaders have periodically invoked the threat of proliferation to deter specific interventions, including strikes on their nuclear facilities and the reimposition of "snapback" sanctions at the UN.

While certain domestic factions have long favored proliferation, Iran's nuclear program has historically played an important, but not exclusive, role in its defense strategy.²¹ After Hamas's brutal attack on Israel in October 2023, shifts in the regional balance of power raised questions about Iran's ability to maintain this ambiguous posture.²² Israeli military operations in 2024 effectively eliminated Iran's ability to project power through proxies like Hamas and Hezbollah, and military exchanges between Israel and Iran damaged the country's air defenses and ballistic missile program. The unexpected collapse of the Assad regime in Syria further circumscribed Tehran's regional clout. Meanwhile, reports indicated that Iranian public opinion was becoming more supportive of nuclear acquisition.²³

These developments spurred debates over whether a weakened Iran would be more bent on proliferation, or more amenable to diplomatic off-ramps.²⁴ In April 2025, Tehran and Washington agreed to bilateral talks, brokered by Oman, to head off the prospects of military escalation.²⁵ In June, however, days before the next round of negotiations, Israel launched extensive strikes against Iranian nuclear and military sites and personnel, triggering Iranian retaliation. The United States eventually joined Israel's counterproliferation campaign, with targeted strikes on three nuclear sites, including the hardened enrichment facility at Fordow.

Israel's decision to use force is consistent with decades of Israeli strategy, but the scope and scale of its June 2025 campaign vastly exceeded past counterproliferation operations. Notably, Israeli strikes were not limited to nuclear facilities, but included military targets and leadership and critical infrastructure. To many observers, the nature of the strikes along with statements from Israeli leaders encouraging the Iranian people to rise up against the regime implied

19 Toby Dalton and Eli Levite, "Iran's Nuclear Threshold Challenge," *War on the Rocks*, May 23, 2024, <https://warontherocks.com/2024/05/irans-nuclear-threshold-challenge/>.

20 Dalton and Levite, "Iran's Nuclear Threshold Challenge."

21 Nicole Grajewski, "Iran Is at a Strategic Crossroads," *Carnegie Endowment for International Peace*, October 3, 2024, <https://carnegieendowment.org/emissary/2024/10/iran-israel-missile-attack-nuclear-strategy-what-now?lang=en>.

22 Ellen Knickmeyer, "US Says Iran Moving Forward on a Key Aspect of Developing a Nuclear Bomb," *AP News*, July 19, 2024, <https://apnews.com/article/iran-nuclear-weapons-sullivan-blinken-2ba2de90dce5047c4a698b2d57a90e4b>.

23 Peyman Asadzade, "A Majority of Iranians Now Favor Possessing Nuclear Weapons. Their Leaders Take Note," *Bulletin of the Atomic Scientists*, June 13, 2024, <https://thebulletin.org/2024/06/a-majority-of-iranians-now-favor-possessing-nuclear-weapons-their-leaders-take-note/>.

24 Richard Nephew, "A Last Chance for Iran," *Foreign Affairs*, January 2, 2025, <https://www.foreignaffairs.com/iran/last-chance-iran>; Ellie Geranmayeh, "Iran Has Every Reason Now to Go Nuclear," *Foreign Policy*, October 24, 2024, <https://foreignpolicy.com/2024/10/24/iran-nuclear-israel-strategy-weapons-missiles-hamas-hezbollah-axis-resistance/>.

25 Andrea Shalal, "Trump Repeats Threat to Use Military Force If Iran Does Not Agree to Nuclear Deal," *Reuters*, April 9, 2025, <https://www.reuters.com/world/trump-repeats-threat-use-military-force-if-iran-does-not-agree-nuclear-deal-2025-04-09/>.

objectives beyond the nuclear program.²⁶ The United States' decision to join this campaign, through limited albeit dramatic strikes on Iranian nuclear infrastructure, has no obvious precedent, although the United States had long threatened military action against Iran's nuclear program. Washington's intervention was followed by a push for diplomacy, with Iran and Israel agreeing to a ceasefire several days later.

The impact of Israeli and American strikes on Iranian nuclear capabilities and intentions remains unclear. While the program has undeniably been degraded, questions persist. In time, Iran could rebuild a nuclear weapons program, especially if it still has access to advanced centrifuges and HEU stockpiles.²⁷ The implications of conflict between Iran and Israel for the regional nuclear landscape also remain to be seen, though Iran's previous strategy of wielding its threshold status as leverage appears to be discredited. Throughout the conflict, other regional powers, especially the Gulf States, who would be vulnerable to Iranian retaliation, have called for diplomacy.²⁸ Further escalation, or a concerted Iranian sprint for the bomb, could destabilize the Middle East and encourage other states to pursue arsenals of their own. Saudi Crown Prince Mohammed bin Salman has repeatedly stated that if Tehran acquires a nuclear weapon, "we will have to get one."²⁹

Great Power Competition and Civilian Nuclear Programs in MENA

Heightened uncertainty about Iranian nuclear capabilities could spur wider interest in nuclear weapons precisely as the expansion of civilian nuclear programs in multiple MENA states might create a more permissive environment for acquiring sensitive technologies. Since 2020, when the UAE brought its first reactor online, MENA has become a locus of intense competition among great powers, who vie for lucrative nuclear contracts and long-term strategic

influence as countries across the globe aim to reduce their reliance on oil and gas, meet clean-energy targets, and project technological prowess. The contours of future nuclear challenges in the Middle East will partly be contingent on which projects come to fruition, what kinds of reactors and fuel cycle facilities states opt to build, and the strings that are (or are not) attached to these programs.

While peaceful nuclear power need not lead to proliferation, MENA's uneven safeguards and the landscape and history of clandestine programs remain potential flashpoints.³⁰ Saudi Arabia and Egypt, for example, have long resisted certain nonproliferation measures, complicating efforts to strengthen global and regional norms. The way nuclear cooperation agreements play out in the Middle East will have implications for the expansion of nuclear programs elsewhere, and for the longevity of institutions like the NPT and the Nuclear Suppliers Group.

Civilian nuclear projects offer external powers a chance to secure long-term leverage over energy policy, technology transfer, and even foreign policy.³¹ Although nuclear exports to the Middle East are not new, the supplier landscape has shifted. The United States, once dominant, has seen its influence diminish, while Russia and China have risen to prominence.³² Competition among nuclear suppliers, and the ability of potential recipients to triangulate among them, could lower the barriers to technology diffusion and challenge the coherence of global nuclear governance.³³ US civil nuclear cooperation agreements—known as 123 agreements—typically require partners to ratify the AP, abstain from enrichment and reprocessing (ENR) activities, implement stringent security measures, and adhere to international nonproliferation treaties and conventions. Erosion of the United States' capacity as a nuclear supplier complicates its ability to leverage peaceful assistance to set global standards for responsible nuclear development. For example, while the UAE signed a 123 agreement with the United States, the

26 Michael Martina and Katharine Jackson, "Netanyahu Says Regime Change in Iran Could Be Result of Israel's Attacks," Reuters, June 15, 2025, <https://www.reuters.com/world/middle-east/netanyahu-says-regime-change-iran-could-be-result-israels-attacks-2025-06-15/>.

27 Richard Nephew, "Can Israel Destroy Iran's Nuclear Program?," *Foreign Affairs*, June 14, 2025, <https://www.foreignaffairs.com/israel/can-israel-destroy-iran-nuclear-program>.

28 Kareem Fahim and Susannah George, "Arab Gulf States Work to Contain Fallout from Israel's Attack on Iran," *The Washington Post*, June 16, 2025, <https://www.washingtonpost.com/world/2025/06/16/israel-iran-conflict-gulf-states/>.

29 Julian Borger, "Crown Prince Confirms Saudi Arabia Will Seek Nuclear Arsenal If Iran Develops One," *The Guardian*, September 21, 2023, <https://www.theguardian.com/world/2023/sep/21/crown-prince-confirms-saudi-arabia-seek-nuclear-arsenal-iran-develops-one>.

30 Nicholas L. Miller, "Why Nuclear Energy Programs Rarely Lead to Proliferation," *International Security* 42, no. 2 (November 1, 2017): 40–77, https://doi.org/10.1162/ISEC_a_00293.

31 Christopher Lawrence, "Normalization by Other Means—Technological Infrastructure and Political Commitment in the North Korean Nuclear Crisis," *International Security* 45, no. 1 (July 1, 2020): 9–50, https://doi.org/10.1162/isec_a_00385.

32 Nicholas L. Miller and Tristan A. Volpe, "The Rise of the Autocratic Nuclear Marketplace," *Journal of Strategic Studies* 46, nos. 6–7 (April 3, 2022): 1–39, <https://doi.org/10.1080/01402390.2022.2052725>.

33 Eliza Gheorge, "Proliferation and the Logic of the Nuclear Marketplace," *International Security* 43, no. 4 (April 2019): 88–127, https://doi.org/10.1162/isec_a_00344.

reactors for its nuclear program were ultimately supplied by South Korea, with limited support from US companies.³⁴

Russia and China, meanwhile, have demonstrated a greater willingness to pursue contracts with countries that have questionable records in nuclear safety, security, and nonproliferation, and to attach fewer strings to those partnerships. Russia's "build-own-operate" model also appeals to Middle Eastern states by offering long-term financing and full project management for large nuclear ventures.³⁵ Egypt is building its first nuclear plant with the Russian state corporation Rosatom, and Russia remains the primary civilian nuclear supplier to Iran. Meanwhile, China is boosting its regional engagement.³⁶ In 2022, President Xi announced plans for deeper cooperation with Gulf countries on nuclear energy, security, and space. This development is already visible in Saudi Arabia, where Chinese scientists are reportedly aiding uranium exploration and have bid on the Kingdom's first nuclear plant.³⁷ Although Riyadh would still prefer partnering with the United States or South Korea for larger projects, the prospect of Chinese or Russian deals gives it greater leverage in negotiations with Washington.

Russia and China's expanding nuclear cooperation in MENA—and the US struggle to balance nonproliferation with commercial and strategic interests—has led recent US administrations to show growing flexibility in order to compete. Saudi Arabia's nuclear aspirations have become a central focus of evolving US policy. Saudi officials have asserted their intention to develop the complete nuclear fuel cycle, including uranium enrichment. During the first Trump admin-

istration (2017–21), officials explored a more assertive nuclear export strategy that would not necessarily require partners to adopt the "gold standard."³⁸ In 2023, reports emerged that the Biden administration was working on an agreement to normalize relations between Saudi Arabia and Israel that might include provisions for a US-operated uranium-enrichment facility on Saudi soil.³⁹ In April 2025, US Secretary of Energy Chris Wright stated that Washington was on the "pathway" to an agreement with Riyadh, and he did not rule out enrichment on Saudi territory.⁴⁰

At this point, the details of any potential arrangements remain highly speculative, and the potential destruction of Iran's enrichment program adds complexity to an already intricate calculus.⁴¹ US officials maintain that any agreement with Saudi Arabia would entail extensive safeguards, whereas refusing to engage might encourage the Kingdom to seek out more permissive suppliers.⁴² In Israel, policymakers appear more apprehensive. As current opposition leader and former Prime Minister Yair Lapid put it: "Israel can't agree to uranium enrichment in Saudi Arabia, because it endangers its national security. . . . It would lead to a regional nuclear arms race."⁴³ While the transparent construction of nuclear reactors, subject to appropriate safeguards, is not generally seen as a major proliferation threat, more states acquiring the capacity to produce fissile material could make it easier for them to actualize weapons ambitions in the future.⁴⁴ If Riyadh starts enriching uranium, it may prompt others like the UAE to follow suit.⁴⁵ Any US-Saudi nuclear deal will therefore face intense scrutiny, both regionally and globally.

34 MENA states have expressed interest in new nuclear technologies, including small modular reactors (SMRs), an area where the United States is making significant investments, but they are not yet available on the global commercial market.

35 Russia offered a \$25 billion loan to Egypt to finance the El Dabaa nuclear power plant, which covered 85 percent of the project cost.

36 Vivian Nereim, "China to Cooperate with Gulf Nations on Nuclear Energy and Space, Xi Says," *The New York Times*, December 9, 2022, <https://www.nytimes.com/2022/12/09/world/middleeast/china-saudi-arabia-gulf-summit.html>.

37 Summer Said, Sha Hua, and Dion Nissenbaum, "Saudi Arabia Eyes Chinese Bid for Nuclear Plant," *The Wall Street Journal*, August 25, 2023, <https://www.wsj.com/world/middle-east/saudi-arabia-eyes-chinese-bid-for-nuclear-plant-e4a56f>.

38 Shannon Bugos, "US Goals Unclear for Saudi Nuclear Deal," *Arms Control Today*, December 2019, <https://www.armscontrol.org/act/2019-12/news/us-goals-unclear-saudi-nuclear-deal>; "Transcript: A New Strategic Approach to Civil Nuclear Cooperation: A Conversation with Christopher Ford," Hudson Institute, February 26, 2019, <https://www.hudson.org/national-security-defense/transcript-a-new-strategic-approach-to-civil-nuclear-cooperation-a-conversation-with-christopher-ford>.

39 Dion Nissenbaum and Dov Lieber, "Saudi Uranium Enrichment Floated Under Possible Israel Deal," *The Wall Street Journal*, Sept. 21, 2023, <https://www.wsj.com/world/middle-east/israel-considers-saudi-arabias-nuclear-program-under-potential-normalization-deal-617ae9bd>.

40 Vivian Nereim, "US Revives Talks with Saudi Arabia on Transfer of Nuclear Technology," *The New York Times*, April 13, 2025, <https://www.nytimes.com/2025/04/13/world/middleeast/saudi-arabia-nuclear-talks-trump.html>.

41 Julian Borger, "Saudis Push for 'Plan B' That Excludes Israel from Key Deal with US," *The Guardian*, May 1, 2024, <https://www.theguardian.com/world/2024/may/01/saudi-us-biden-deal-israel>.

42 Kelsey Davenport, "Saudi Push for Enrichment Raises Concerns," *Arms Control Association*, November 2023, <https://www.armscontrol.org/act/2023-11/news/saudi-push-enrichment-raises-concerns>; Nissenbaum and Lieber, "Saudi Uranium Enrichment Floated Under Possible Israel Deal."

43 Nissenbaum and Lieber, "Saudi Uranium Enrichment Floated Under Possible Israel Deal."

44 Although Egypt has not renounced the option of pursuing ENR activities, its agreement with Rosatom stipulates that Russia will supply fuel for the El Dabaa reactors and assist in managing the used fuel.

45 While the UAE renounced these capabilities, its 123 agreement stipulates that it can reopen negotiations if another regional power secures more generous terms from the United States.

Challenges, Risks, and Recommendations

Intensifying regional tensions—including conflict between an undeclared nuclear power (Israel) and a threshold nuclear state (Iran)—along with efforts to expand civilian nuclear programs in multiple Middle Eastern countries are already altering the nuclear landscape in MENA. These trends have resurfaced existing fault lines and generated new challenges, especially on the question of nuclear latency—that is, technologies, expertise, and infrastructure that would make it easier for a state to pursue nuclear weapons in the future.

Managing contemporary nuclear challenges across the region will not be easy. Trying to prevent Iran from crossing the nuclear threshold remains crucial for regional security and the global nuclear order, but a purely punitive approach risks undermining regional stability and making nuclear weapons more appealing. At the same time, the demise of the JCPOA, which Iran was abiding by, and the sequence of events that has followed, including the scale and scope of Israeli military strikes and American involvement, will likely complicate future nonproliferation diplomacy with Iran and other states. Iranian leaders have not forgotten the fate of regimes in Iraq and Libya that gave up their nuclear programs.

Analysts have long warned that military action might push Tehran toward more aggressive pursuit of a nuclear arsenal. Iran could still act on its periodic threats to withdraw from the NPT and has already said that it will roll back cooperation with the IAEA. Whether now or in the future, Iranian leaders might conclude that acquiring nuclear weapons is the only way to ensure the regime's long-term security, and other governments in the region might reach similar conclusions. Military strikes have set Iran's nuclear program back, perhaps considerably, but they have not eliminated technologies and know-how that would allow it to eventually reconstitute a nuclear weapons program, in ways that might be harder to detect and monitor.

Whatever Iran ultimately decides, questions about its residual capabilities and the potential for clandestine reconstitution will remain salient for the foreseeable future. Previous experience dismantling nuclear programs in Iraq and Libya, both significantly less sophisticated than Iran's, suggest that even if Iran ultimately agrees to back away from the

threshold, this process will be fraught, especially if Iranian officials become uncooperative.

In the years to come, MENA's nuclear landscape is likely to be characterized by considerable uncertainty. The United States and its partners should therefore try to uphold high standards of nuclear safety, security, and safeguards, and support a more coherent and cohesive regional approach to nuclear governance.

Balancing these imperatives will pose challenges. Israeli and American military operations against Iran, including attacks on safeguarded nuclear facilities, have reanimated frustrations about double standards in the nuclear order, although there appears to be at least nominal consensus within the region on the need for de-escalation. Gulf states in particular do not want to be dragged into a regional war. Despite their issues with Tehran, most MENA governments condemned the Israeli attacks and signed a joint statement calling for the establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction and highlighting the "urgent need" for all regional actors to join the NPT—an exhortation that, at present, only applies to Israel.⁴⁶ But these relations remain fragile. Iran's decision to respond to US strikes by launching missiles at an American military base in Qatar, though telegraphed in advance, underscored the live possibility of regional escalation, and likely unsettled neighboring states. Doha eventually played a role in urging Tehran to agree to a ceasefire.⁴⁷

Efforts to restore regional stability, alongside the anticipated expansion of civilian nuclear programs across MENA, might create openings for improved cooperation. Sharing best practices on nuclear safety and security, including how to safeguard reactors against insider and outsider threats, could be mutually beneficial. More ambitious ideas, such as establishing a regional nuclear consortium—something that US and Iranian officials reportedly discussed during the spring 2025 negotiations—are likely off the table until tensions cool, although policymakers could conduct more rigorous feasibility studies on multilateral approaches to the nuclear fuel cycle in the interim.⁴⁸

At the end of the day, any solution to the nuclear challenges in the Middle East remains contingent on the region's broader security dynamics. Policies that seek to reduce immediate proliferation threats are unlikely to achieve enduring success if the underlying geopolitical tensions that drive nuclear

46 "Egypt Among 21 Countries Urging De-Escalation After Israeli Strikes on Iran," *Ahram Online*, June 16 2025, <https://english.ahram.org.eg/NewsContent/1/1234/548076/Egypt/Foreign-Affairs/Egypt-among--countries-urging-deescalation-after-1.aspx>.

47 Andrew England, James Shotter, and Neri Zilber, "How Donald Trump Brokered a Shaky Israel-Iran Ceasefire," *Financial Times*, June 24, 2024, <https://www.ft.com/content/022c8beb-8930-46fb-bdf6-f8059b8d99b1>.

48 Barak Ravid, "Iran Could Accept Nuclear Consortium on Its Soil, Iranian Official Says," *Axios*, June 3, 2025, <https://www.axios.com/2025/06/03/iran-nuclear-consortium-trump-proposal>; Farnaz Fassihi, David E. Sanger, and Jonathan Swan, "US Proposes Interim Step in Iran Nuclear Talks Allowing Some Enrichment," *The New York Times*, June 3, 2025.

weapons ambitions remain unresolved. Ultimately, nuclear challenges in the Middle East are beholden to the region's rivalries, grievances, and simmering conflicts. Until these broader tensions—whether between Israel and its neighbors, Iran and Saudi Arabia, or among other regional powers—are meaningfully addressed, nuclear governance efforts will face significant limitations, and nuclear ambitions will remain a prominent feature of MENA's security landscape. ●

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A Nuclear Veto? The Credibility– Consensus Trade-Off and NATO Nuclear Use Procedures

Jacklyn Majnemer

Do NATO allies have a veto over the use of American nuclear weapons stationed in Europe? While the alliance has publicly indicated that a NATO nuclear mission would require consensus approval from the Nuclear Planning Group, NATO allies have limited practical means to veto American unilateral use of these weapons. The authorization procedures within NATO for the use of American nuclear weapons stationed in Europe pose inherent trade-offs between credibility and consensus. Meaningful consensus decision-making undermines the credibility of the American nuclear weapons on European soil, but enhancing credibility raises the risk of American nuclear use emanating from Europe that is unwanted by NATO allies. Given the recent erosion of the security environment and allies' trust in the US, there are reasons to think that the tension between credibility and consensus might become more salient within NATO.

The United States deploys an estimated 100 B61 nuclear bombs in five NATO countries: Belgium, Germany, Italy, the Netherlands, and Turkey.¹ The US has custody and control over these nuclear weapons, which are fitted with Permissive Action Links to prevent unauthorized use.² In wartime, some of these bombs are designated to be delivered by NATO allies under nuclear sharing arrangements, while others would be delivered by American forces stationed in Europe. Allies can deliver these weapons only if the US first authorizes their use and releases them to the ally. Therefore, only the US has positive control over the American nuclear weapons stationed in Europe.

Do NATO allies have *negative* control over weapons stationed in Europe? In other words, do they

have the ability to *prevent* nuclear use *after* American authorization? If NATO allies have veto power over the use of nuclear weapons stationed in Europe, what are the implications for these weapons' credibility as deterrents? If not, what are the implications for alliance unity if nuclear use becomes a realistic prospect?

The authorization procedures for the use of American nuclear weapons stationed in Europe pose inherent trade-offs between credibility and consensus. This problem is not new and can be traced to the Cold War. During the Cold War, the Americans were unwilling to commit to consensus decision-making on nuclear use because of their fear that it would undermine the credibility of its nuclear weapons in Europe.³ European allies, while concerned about the

1 Hans M. Kristensen, Matt Korda, Eliana Johns, and Mackenzie Knight, "Nuclear Weapons Sharing, 2023," *Bulletin of the Atomic Scientists* 79, no. 6 (November 2, 2023): 393–406.

2 Kristensen et al., "Nuclear Weapons Sharing, 2023," 395.

3 Jeffrey H. Michaels, "'No Annihilation Without Representation': NATO Nuclear Use Decision-Making During the Cold War," *Journal of Strategic Studies* (May 11, 2022): 6.

credibility of the American extended deterrent, also feared the prospect of American unilateral nuclear action in Europe undermining their interests.⁴ The US sought to protect its flexibility, while NATO allies pushed for a meaningful say in decision-making on nuclear use.⁵ According to the available evidence, the issue of ensuring both timely release and allied consultation was obfuscated rather than resolved during the Cold War.⁶ After the fall of the Soviet Union, the issue retreated into the background.

Given the recent erosion of the security environment and trust in the US, there are reasons to think that the tension between credibility and consensus might become more salient within NATO today. As in the Cold War, allies cannot guarantee that their views on nuclear use will always align with those of the US. Concerns about entrapment, escalation, the costs of war, and national sovereignty provide incentives for European politicians and citizens to worry about unwanted nuclear use and push for further guarantees of preventative control over weapons stationed on their soil or elsewhere in Europe.⁷ President Donald Trump's unprecedentedly hostile attitude toward NATO allies will likely amplify these concerns. Further, discussions of nuclear use, consultation, and authorization will only become more important as the security environment continues to deteriorate. However, any attempt to secure a credible veto over nuclear weapons in Europe will diminish these weapons' credibility and will likely be opposed by both the US and insecure allies; if these opposing concerns become politically salient and cannot be resolved, increased intra-alliance tensions are the likely result.

Why Nuclear Deployments in Europe?

This analysis is limited to the approximately 100 nonstrategic nuclear bombs that are stationed in Europe, not the totality of the American nuclear arsenal. While these weapons represent a fraction of the total American nuclear stockpile, they take on a unique role within NATO. Analysts that support the continued deployment of these weapons argue that they fill a gap on the escalation ladder, providing a more limited nuclear option to respond to Russian aggression in cases where "strategic retaliation would be disproportionate."⁸ The US and hosting allies have invested in upgrades to the B61 bomb, dual-capable aircraft, and the air bases that host these capabilities.⁹ In light of Russia's increasingly aggressive stance and large nonstrategic nuclear arsenal, some commentators and politicians have called for various augmentations of nuclear sharing in NATO, including proposals to increase nuclear deployments to Europe, expand the number of nuclear host sites, and expand participation in the dual-capable aircraft (DCA) mission.¹⁰

Experts have extensively debated the operational value and military credibility of these weapons in the post-Cold War environment.¹¹ Previous work has also analyzed the importance of NATO nuclear sharing as a "tool of alliance management" and as a symbol of the US's extended nuclear commitment and alliance cohesion.¹² However, the potential issues related to authorization of American weapons deployed in Europe since the end of the Cold War have not received as much attention. Allies' concerns about preventative control and how those concerns might undermine allied unity in the post-Ukraine invasion environment have not been extensively discussed.¹³ The secrecy surrounding NATO nuclear sharing provides some limitations to the analysis of

4 Michaels, "No Annihilation Without Representation," 6.

5 Michaels, "No Annihilation Without Representation," 6; see also Kristensen et al., "Nuclear Weapons Sharing, 2023," 399–400.

6 See Michaels, "No Annihilation Without Representation."

7 On unwanted use theory, see Lauren Sukin, "Credible Nuclear Security Commitments Can Backfire: Explaining Domestic Support for Nuclear Weapons Acquisition in South Korea," *Journal of Conflict Resolution* 64, no. 6 (July 2020), especially 1014–16.

8 Alexander Mattelaer, "Nuclear Sharing and NATO as a 'Nuclear Alliance,'" in *Alliances, Nuclear Weapons and Escalation: Managing Deterrence in the 21st Century*, ed. Stephan Fruhling and Andrew O'Neil (ANU Press, 2021), 123–31.

9 Kristensen et al., "Nuclear Weapons Sharing, 2023."

10 Frank Kuhn, "Making Nuclear Sharing Credible Again: What the F-35A Means for NATO," *War on the Rocks*, September 14, 2023, <https://warontherocks.com/2023/09/making-nuclear-sharing-credible-again-what-the-f-35a-means-for-nato/>; Michael John Williams, "To Deter Russia, NATO Must Adapt Its Nuclear Sharing Program," *Atlantic Council*, July 30, 2024, <https://www.atlanticcouncil.org/blogs/new-atlanticist/to-deter-russia-nato-must-adapt-its-nuclear-sharing-program/>; "Poland's Bid to Participate in NATO Nuclear Sharing," *Strategic Comments* 29, no. 7 (August 9, 2023), <https://doi.org/10.1080/13567888.2023.2258045>.

11 See, for example, Karl-Heinz Kamp and Robertus C. N. Remkes, "Options for NATO Nuclear Sharing Arrangements," in *Reducing Nuclear Risks in Europe: A Framework for Action*, ed. Steve Andreasen and Isabelle Williams (Nuclear Threat Initiative, 2011), 76–95; Kuhn, "Making Nuclear Sharing Credible Again"; Petr Suchy and Bradley A. Thayer, "Weapons as Political Symbolism: The Role of US Tactical Nuclear Weapons in Europe," *European Security* 23, no. 4 (October 2, 2014): 509–28.

12 Linde Desmaele, "Still a Useful Myth? NATO's Theater Nuclear Weapons as Tools of Alliance Management," *The Nonproliferation Review* (March 3, 2025): 1–24; Mattelaer, "Nuclear Sharing and NATO as a 'Nuclear Alliance'"; Suchy and Thayer, "Weapons as Political Symbolism."

13 For analysis of the evolution of nuclear sharing in NATO and how control relates to allied fears of abandonment and entrapment in the past and today, see Richard K. Betts, "Nervous Allies and Trump: Nuclear Lessons from NATO," *The Washington Quarterly* 48, no. 1 (April 8, 2025): 7–22.

these issues, as much of the relevant data is classified. Nevertheless, material available from the Cold War and today allows for the assessment of the extent and implications of an allied nuclear veto in NATO. The interest in preventative control during the Cold War demonstrates that NATO allies can push for more of a say on nuclear use decisions, despite—or even because of—an insecure international environment, making these topics highly relevant today.

Does an Allied Veto Exist?

An allied nuclear veto has two potential mechanisms. First, given that the use of American nuclear weapons in Europe would be a NATO operation, a veto could exist at the multilateral level. Second, since weapons are stationed on the host's territory and require a prior agreement with the host, a veto could also exist at the bilateral level. While the US has made formal commitments to consensus decision-making on the multilateral and bilateral level, the practical ability of allies to actually veto American nuclear use is debatable. Nuclear hosts, especially in cases where their forces are tasked with the delivery of these weapons, have more practical tools available to prevent unwanted nuclear use than non-hosting allies.

Multilateral Veto: Formal Commitments

NATO's policy as of 2022 has been to use consensus decision-making to authorize NATO nuclear missions. A NATO factsheet on nuclear sharing states: "A nuclear mission can only be undertaken after explicit political approval is given by NATO's Nuclear Planning Group (NPG) and authorisation is received from the US President and UK Prime Minister."¹⁴ Full consensus of the NPG—which includes all allies except France—would likely be difficult to achieve.¹⁵ Even if responding to a nuclear strike, which would be the most likely circumstance for full approval, NPG consensus on nuclear retaliation would not

be guaranteed. For example, if faced with a limited nuclear strike, or in a situation in which Russia was losing a conflict, allies may take different positions on the moral appropriateness and strategic utility of a nuclear versus a conventional military response.

NATO's official position of consensus is puzzling if one views European nuclear deployments only through the lens of credibility. During the Cold War, the US resisted a NATO-wide veto over nuclear use decisions for this reason, instead providing a more limited commitment to consult with allies if time and circumstances permitted.¹⁶ However, whether NATO's commitment to consensus fully amounts to a multilateral veto depends on the practical ability of NATO allies to prevent the US's unilateral use of its nuclear weapons in Europe.

Multilateral Veto: Practical Considerations

Aside from Washington's commitment "on paper" to consensus decision-making, there are also operational implications if the US fails to gain NPG approval for a nuclear mission. Several non-host NATO allies support NATO's nuclear missions through Conventional Support for Nuclear Operations (CSNO)—previously known as Support of Nuclear Operations With Conventional Air Tactics (SNOWCAT)—which includes the Czech Republic, Denmark, Hungary, Poland, and two unconfirmed allies as of 2023.¹⁷ The CSNO mission includes support such as providing midair refueling, reconnaissance, and suppression of air-defense systems. Attempting to trigger nuclear use outside of an official NATO channel could mean that CSNO would not be available to the US.

The US could, however, use its own forces to support nuclear employment. Depending on the target, some participants in CSNO might also agree to provide conventional support even without NATO approval. Overall, there appear to be only limited practical means by which non-host allies can prevent the US from employing its own nuclear weapons, even when those weapons are stationed in Europe.

14 NATO, "NATO's Nuclear Sharing Arrangements," February 2022, https://www.nato.int/nato_static_fl2014/assets/pdf/2022/2/pdf/220204-factsheet-nuclear-sharing-arrange.pdf.

15 Tytti Erästö, "More Investment in Nuclear Deterrence Will Not Make Europe Safer," *SIPRI*, December 5, 2023, <https://www.sipri.org/commentary/essay/2023/more-investment-nuclear-deterrence-will-not-make-europe-safer/>; Kristensen et al., "Nuclear Weapons Sharing, 2023," 399; Edmond Seay, "NATO's Incredible Nuclear Strategy: Why US Weapons in Europe Deter No One," *Arms Control Association*, 2011, <https://www.armscontrol.org/act/2011-11/natos-incredible-nuclear-strategy-why-us-weapons-europe-deter-no-one>.

16 William Burr, ed., "The US Nuclear Presence in Western Europe, 1954–1962, Part II," Briefing Book #722, *The National Security Archive*, September 16, 2020, <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2020-09-16/us-nuclear-presence-western-europe-1954-1962-part-ii>; Kristensen et al., "Nuclear Weapons Sharing, 2023," 399; Catherine McArdle Kelleher, "NATO Nuclear Operations," in *Managing Nuclear Operations*, eds. Ashton B. Carter, John D. Steinbruner, and Charles A. Zraket (Brookings Institution, 1987), 445–69; Michaels, "No Annihilation Without Representation."

17 Kristensen et al., "Nuclear Weapons Sharing, 2023," 395. Greece and Turkey also participate in the nuclear mission by providing DCA "in a reserve and contingency role" (394).

Bilateral Veto: Formal Commitments

Available records show that the UK, Canada, Italy, and West Germany have negotiated bilateral consultation agreements or joint authorization agreements with the US for the weapons stationed on their soil, although the terms of these agreements were not uniform.¹⁸ For example, in 1968 West Germany negotiated a limited bilateral consultation agreement, which was not part of their original nuclear stockpile agreement.¹⁹ Conversely, in 1962, the Italians and Americans finalized both their nuclear stockpile agreement and a consent for nuclear use agreement, which explicitly called for joint authorization:

*In connection with the stockpiling of United States atomic weapons in Italy, it is understood that the decision to employ these weapons will be taken only in agreement with the Governments of Italy and the United States of America. The agreement of the two Governments would be given in light of circumstances at the time and having regard to the undertaking they have assumed in Article 5 of the North Atlantic Treaty.*²⁰

The Canadian stockpile agreement, signed in 1963, called for joint authorization and consultation “where practical”:

*The release of nuclear warheads to meet operational requirements will be the subject, where practical, of prior intergovernmental consultation. They will be used, when authorized by both Governments, only in accordance with procedures established by the appropriate Allied Commander or by the Canadian and United States military authorities as applicable.*²¹

Details of the procedures for the use of nuclear weapons stationed in Canada were finalized in 1965, with an exchange of notes on the “Authorization for the Operational Use of Nuclear Weapons.”²² This document set out the “emergency” circumstances in which the commander of the North American Aerospace Defense Command (NORAD) could bypass Canadian authorization—for example, if the USSR attacked North America or another NATO ally.²³

The contents of other bilateral stockpile agreements covering NATO hosts are still classified; therefore, it is uncertain whether and when these NATO hosts were able to negotiate their own joint authorization or consultation agreements during the Cold War. In 1968, NATO agreed that “special weight” would be given to host countries when the alliance was considering nuclear use.²⁴ This special status was also to be conferred upon the country providing or employing the delivery vehicles for the nuclear weapons.²⁵ This did not amount to a “formal veto,” however, making the implications of “special weight” in NATO decision-making unclear.²⁶

Bilateral Veto: Practical Considerations

Several commentators have highlighted NATO nuclear hosts’ practical ability to veto nuclear use originating from their soil, particularly where the host controls the means of delivery.²⁷ In these cases, host states can order their forces to stand down despite US authorization, preventing nuclear use by refusing to deliver the weapons. This “practical veto,” however, has limitations.

Not all host states are tasked with the delivery of all the weapons on their soil. In some cases, American forces stationed in the host state take on this

18 Matthew Jones, “A Matter of Joint Decision: The Origins of British Nuclear Retaliation Procedures and the Murphy–Dean Agreement of 1958,” *The English Historical Review*, October 18, 2024, <https://doi.org/10.1093/ehr/ceae161>; Michaels, “No Annihilation Without Representation,” 6–12.

19 William Burr, “Consultation Is Presidential Business: Secret Understandings on the Use of Nuclear Weapons, 1950–1974,” Briefing Book #159, *The National Security Archive*, July 1, 2005, <https://nsarchive2.gwu.edu/NSAEBB/NSAEBB159/>; Burr, “The US Nuclear Presence in Western Europe, 1954–1962, Part II.”

20 RG 59, CDF, 611.57/1–1762, US Embassy Italy Despatch 525 to State Department, “Transmitting Documents Constituting Military Atomic Stockpile and ‘Consent’ Agreements,” January 17, 1962, <https://nsarchive.gwu.edu/document/28556-document-18-us-embassy-italy-despatch-525-state-department-transmitting-documents>.

21 John Clearwater, *Canadian Nuclear Weapons: The Untold Story of Canada’s Cold War Arsenal* (Dundurn Press, 1998), 243. Nuclear weapons were withdrawn from Canada in 1984.

22 Clearwater, *Canadian Nuclear Weapons*, 246–56.

23 Clearwater, *Canadian Nuclear Weapons*, 246–56; Michaels, “No Annihilation Without Representation,” 8.

24 Kelleher, “NATO Nuclear Operations,” 462; Kristensen et al., “Nuclear Weapons Sharing, 2023,” 399; Michaels, “No Annihilation Without Representation,” 17.

25 Kelleher, “NATO Nuclear Operations,” 462; Kristensen et al., “Nuclear Weapons Sharing, 2023,” 399; Michaels, “No Annihilation Without Representation,” 17.

26 Michaels, “No Annihilation Without Representation,” 17.

27 For example, Yasmin Afina, Calum Inverarity, and Beyza Unal, “Appendix II: Nuclear Sharing,” in *Ensuring Cyber Resilience in NATO’s Command, Control and Communication Systems* (Chatham House, 2020); Kamp and Remkes, “Options for NATO Nuclear Sharing Arrangements,” 93; Kelleher, “NATO Nuclear Operations,” 463.

role, giving the US control over both authorization and delivery of these weapons. For example, while Italian forces and aircraft are tasked with the employment of the estimated 10–15 nuclear bombs at Ghedi Air Base, the 20–30 nuclear bombs at Aviano Air Base are slated for delivery by American aircraft and personnel.²⁸ In Turkey, the 20–30 bombs at Incirlik Air Base are designated for American delivery.²⁹ Unlike Aviano, however, the US is not permitted to permanently station its aircraft at Incirlik, meaning that American forces would need to “fly in during a crisis to pick up the weapons, or the weapons would have to be shipped to other locations before use.”³⁰ In these cases, the US has more flexibility to act unilaterally. Even when host state forces are tasked with delivery, the US retains the option of not releasing nuclear weapons to hosts and flying their own nuclear-capable aircraft into or the nuclear bombs out of the host state.

There are also possible limitations to the ability of the US to unilaterally transport nuclear weapons into and out of the host state without their consent. Given that the nuclear weapons are stationed on the host’s territory and at their military bases, host states can try to prevent the US from using their airspace or obstruct the movement of American dual-capable aircraft or personnel on their territory.³¹ Whether a host would be willing or able to take this kind of action against the US is unclear.

In summary, compared to non-host allies, NATO nuclear hosts have received more concrete commitments for joint authorization and consultation, and have more practical means available to prevent the use of nuclear weapons stationed on their territory. On the other hand, whether hosting amounts to preventative control is debatable. In certain cases, to assert this veto, the host would have to take drastic action to obstruct the US.

If host states have a practical veto, would they exercise it? While this would depend on the circumstances, several factors may increase hosts’ reluctance to authorize nuclear use, which has serious implications for the credibility of the nuclear mission. First, all nuclear hosts are located off the front lines of NATO, making them less exposed than allies on the eastern flank. Unlike during the Cold War, nuclear hosts like Germany are no longer vulnerable

to the threat of a rapid Russian overrun, meaning that they are now more likely to be concerned with the risks of entrapment and nuclear escalation, thus encouraging more caution on nuclear use.³² Second, the populations of Germany, Belgium, and the Netherlands have historically been anti-nuclear and are more likely to oppose nuclear use. While a recent study of attitudes in Germany and the Netherlands has found a rise in pro-nuclear attitudes since the Russian invasion of Ukraine, it is unclear whether these changes will persist.³³ And the recent rise notwithstanding, a majority of both German and Dutch respondents still opposed nuclear use, even as a response to a Russian nuclear strike.³⁴ Turkey, while not high in anti-nuclear sentiment, has developed more friendly relations with Russia and has demonstrated willingness to act as a spoiler of alliance consensus when it has suited Ankara’s interests. Finally, multiple host states have experienced growth in the influence of far-left and far-right political movements with NATO-skeptic attitudes and more friendly dispositions towards Russia. These factors also increase the likelihood that hosts will seek reassurance on preventative control. This may put hosts at odds with more vulnerable allies, such as Poland and the Baltics, which might be more concerned with credibility over consensus—particularly given the high value that such states also place on American deployments in Europe.

Between Credibility and Consensus: Why Allies Care About Preventative Control

Given that increasing the number of vetoes on nuclear use risks undercutting the credibility of NATO’s nuclear mission, why would allies push for preventative control? Why would NATO signal that a nuclear mission would require an NPG consensus? While NATO allies have an interest in maintaining the integrity of the alliance’s nuclear deterrent, they cannot guarantee that their interests related to nuclear use will always align with those of the US or with the rest of NATO. Allies therefore have incentives to push for a nuclear veto to ensure that nuclear weapons will not be used in situations that might

28 Kristensen et al., “Nuclear Weapons Sharing,” 398.

29 Kristensen et al., “Nuclear Weapons Sharing,” 398.

30 Kristensen et al., “Nuclear Weapons Sharing,” 398.

31 Afina, Inverarity, and Unal, “Appendix II.”

32 See Dan Reiter, “Security Commitments and Nuclear Proliferation,” *Foreign Policy Analysis* 10, no. 1 (January 10, 2014): 65–66, 77.

33 See Michal Onderco, Michal Smetana, and Tom W. Etienne, “Hawks in the Making? European Public Views on Nuclear Weapons Post-Ukraine,” *Global Policy* 14, no. 2 (May 2023): 305–17.

34 Onderco, Smetana, and Etienne, “Hawks in the Making?” 311.

undermine their interests and security. The US also has incentives to reassure allies that their views and interests will inform nuclear use decisions, to maintain alliance ties and foreign nuclear deployments.

Allies relying on a nuclear patron face the risk of unwanted nuclear use, even if it is done ostensibly on the ally's behalf. Recent research on attitudes in South Korea has found that higher belief in the credibility of a patron's nuclear commitments can increase rather than decrease public support for proliferation in a vulnerable ally.³⁵ According to analyst Lauren Sukin, this is because more credible nuclear commitments can increase allied fears of unwanted nuclear use by the nuclear patron.³⁶ Obtaining an independent nuclear arsenal then becomes a means for the ally "to regain control over their nuclear fate" to avoid entrapment and escalation initiated by a nuclear patron.³⁷ These findings suggest that even vulnerable allies without nuclear weapons on their soil can be concerned with preventative control and that citizens may support drastic action to obtain it.

NATO nuclear hosts face unique risks. Without a credible check on the decision-making authority of the nuclear patron, these allies are vulnerable to nuclear use that is initiated from their territory and uses their equipment and personnel, without any consideration of their interests. Nuclear hosts can therefore become targets of preventative or retaliatory strikes in response to actions they oppose.³⁸ When considering a preventative or preemptive strike against nuclear weapons based in Europe, an adversary is only likely to weigh the preferences of the host state if they can impact decision-making on use. Likewise, an adversary might see a nuclear host state as culpable in an attack initiated from their soil, regardless of whether they authorized it or not, making them a target for retaliation.

Aside from calculations about the threat of entrapment and escalation, concerns about sovereignty also push host states to negotiate a nuclear veto. From this perspective, preventative control is an end unto itself and a matter of national pride. Allies do not need to envision a particular scenario of unwanted use to believe that they should have a

say in decision-making and not simply defer to the United States, particularly for weapons stationed on their soil.

There are many examples of nuclear hosts seeking reassurance on consultation and joint authorization during the Cold War, including Canada, West Germany, Italy, and the UK. In 1963, the Canadian opposition leader, Lester B. Pearson, reassured the Canadian public that, under a nuclear sharing agreement, "a US finger would be on the trigger; but a Canadian finger would be on the safety catch."³⁹ When he became prime minister, he pushed for a joint authorization provision in the 1963 stockpile agreement, even though the weapons stationed on Canadian soil were for the interception of incoming Soviet bombers, which increased the need for rapid release and reduced concerns about entrapment and escalation.⁴⁰ The decision to negotiate for joint authorization overrode the objections of the Canadian military, which argued that a "two key" or "dual control" system was more appropriate for "offensive weapons" rather than for nuclear weapons for air defense, which "could only be used when enemy forces are overhead" and time was of the essence.⁴¹ West Germany "repeatedly sought US assurances about nuclear consultation," revealing that vulnerable allies can be concerned with both abandonment and unwanted nuclear use.⁴² Italy "attached great political importance" and bargained hard in the 1960s for a joint authorization agreement for the American nuclear weapons on their territory, overcoming American resistance to this provision.⁴³ In the UK, parliamentary criticism in the late 1950s about the vagueness of existing consultation agreements between the US and the UK led the British government to negotiate the Murphy-Dean agreement, which provided a more detailed framework for joint authorization.⁴⁴ This example demonstrates that host governments can be pressured at the domestic level to revise existing nuclear agreements.

Nevertheless, the content of these agreements varied, and practical means for preventing unilateral American nuclear use were often limited or unclear. For example, Canada's agreement on use procedures

35 Sukin, "Credible Nuclear Security Commitments Can Backfire."

36 Sukin, "Credible Nuclear Security Commitments Can Backfire."

37 Sukin, "Credible Nuclear Security Commitments Can Backfire," 1012.

38 Reiter, "Security Commitments and Nuclear Proliferation," 65–66.

39 Library and Archives Canada, "Nuclear Weapons—Storage in Canada," L. B. Pearson Papers (MG32 N2), press release, vol. 114, January 13, 1963.

40 Clearwater, *Canadian Nuclear Weapons*, 36.

41 Clearwater, *Canadian Nuclear Weapons*, 36.

42 Michaels, "No Annihilation Without Representation," 9.

43 Michaels, "No Annihilation Without Representation," 9; Burr, "The US Nuclear Presence in Western Europe, 1954–1962, Part II."

44 Jones, "A Matter of Joint Decision."

included a variety of emergency circumstances in which Canadian approval could be bypassed.⁴⁵ In the case of Italy, while joint authorization was negotiated in principle, only the Jupiter missile systems stationed in Italy between 1960 and 1963 were under a physical dual-key system, meaning that their release required physical keys from both Italian and American military personnel.⁴⁶ For other weapons systems stationed on their soil, Italy lacked this practical means of preventing unilateral American nuclear use.⁴⁷ Trust in the US was therefore essential for these agreements to provide reassurance to allies.

Why Today?

For most of the Cold War, the procedure for authorizing nuclear use within NATO was “deliberately vague.”⁴⁸ By not clearly committing to either unilateral American authority or consensus decision-making, the alliance avoided explicitly confronting the implications of adopting either approach. Despite the lack of clear procedures for NATO nuclear authorization, both deterrence and cohesion held.

Today, it is possible that the tension between credibility and consensus will similarly be swept under the rug, avoiding conflict both inside and outside NATO. Increasing concerns about the Trump administration’s commitment to NATO as well as the president’s sensitivity to challenges to his authority might discourage allies from questioning American nuclear deployments. Allies may worry that criticism of use procedures might elicit rebuke from Washington about European ingratitude and encourage the withdrawal of American equipment and personnel from Europe. The increasing salience of NATO’s nuclear mission, given the darkening security environment in Europe, however, may cause allies to scrutinize nuclear authorization procedures in a way that they have not since the end of the Cold War.

While increasing insecurity may promote solidarity within NATO and encourage allies to smooth over political issues related to authorization, there are also reasons to think the opposite. In the 2010s, NATO retained nuclear weapons in Europe primarily for political reasons: to maintain alliance cohesion, to avoid sending a signal of decreased American nuclear commitment, and to use as leverage in bargaining with Russia on reducing Moscow’s own tactical nuclear stockpile. When nuclear weapons are retained

as political symbols or bargaining chips, allies do not need to consider possible nuclear use to grasp their value. When they are perceived as usable weapons of war and credible means of deterrence, allies are more likely to consider the mechanisms that underlie their authorization and release. At the same time, as tensions increase, allies are likely to worry again that these weapons might be either used or targeted—and more insecure allies may increasingly question the credibility of these weapons and the feasibility of consensus decision-making, especially if host states appear reluctant to authorize their use.

This increased salience may have effects outside of elite circles and internal NATO discussions, drawing more public scrutiny onto the alliance’s nuclear mission and decision-making on nuclear use. While public opposition to nuclear hosting has been high in Germany, Belgium, and the Netherlands since the end of the Cold War, this anti-nuclear sentiment did not translate into concrete steps toward withdrawal of nuclear weapons from their territory. This inaction was in part due to the low salience of nuclear weapons, which made it easier for politicians not to address the issue and instead quietly defer to more insecure allies like Poland and the Baltics, which have pushed for nuclear weapons to remain in Europe. As the threat of nuclear war increases, the public might become more interested in the rules and procedures that govern the nuclear weapons on their soil, as well as in their country’s role in decision-making and the extent that these weapons serve national security interests. Continued opacity around the contents of nuclear sharing agreements could fuel this dynamic by obscuring reassurances on joint authorization and nuclear consultation.

Given that the US retains custody and full control of these nuclear weapons in peacetime, trust in the US is an important component in trying to resolve the credibility-consensus dilemma. This trust is based on three beliefs. First, that the US will not act outside of the core security interests of its NATO allies. Second, that the US will honor its agreements on nuclear use and consultation. Third, that the US will competently maintain the security of the nuclear weapons on foreign soil. The Trump administration has given allies reason to doubt the US on all three of these.⁴⁹

The Trump administration has indicated that US interests diverge from and are even in direct opposi-

45 Clearwater, *Canadian Nuclear Weapons*, 246–56.

46 Leopoldo Nuti, “Italy’s Nuclear Choices,” *UNISCI Discussion Papers*, no. 25 (January 2011): 181.

47 Nuti, “Italy’s Nuclear Choices,” 181.

48 Michaels, “No Annihilation Without Representation,” 1.

49 On how the Trump administration might increase both fears of abandonment and entrapment within allies, see Betts, “Nervous Allies and Trump.”

tion to its NATO allies.⁵⁰ For example, Trump's recent rebuke of Ukrainian President Volodymyr Zelensky and subsequent cutoff of military aid to Ukraine, along with his support for Ukrainian concessions to Russia, has put the US at odds with most NATO allies, who view these moves as weakening Ukraine and emboldening Russia at a critical point in the conflict.⁵¹ Trump also has repeatedly threatened the sovereignty of Canada and Greenland, positioning the US as a potential aggressor against allies it has promised to defend.⁵² In addition, Trump has accused NATO allies of undermining the US's economic interests, threatening to implement a suite of tariffs that would be damaging to European and Canadian economies.⁵³ Given these moves, it may not be so far-fetched for NATO allies to wonder whether American nuclear weapons will be used in service of their security interests or against them.

This lack of trust is compounded by Trump's reputation for unreliability on institutionalized commitments. Trump has repeatedly demonstrated a willingness to break agreements and exit institutions when he deems it to be in his interest. On NATO commitments specifically, Trump has suggested that an ally's eligibility for collective defense under Article 5 should be conditional on their level of defense spending, an unprecedented move that signals a more transactional outlook toward maintaining defense commitments to allies.⁵⁴ In fact, recent polling in several NATO nations "showed a dramatic decline of trust in US collective defense commitments" since Trump has assumed office for the second time.⁵⁵ Even if there is a settled procedure in place to ensure consensus before nuclear use, allies have more reason than ever to wonder whether their supposed veto is real or exists only on paper. Moreover, allies may wonder whether American unreliability, combined with their diverging security interests, undercuts the

credibility gains that come with the current nuclear sharing system.

Finally, the Trump administration's chaotic firing and rehiring of personnel at the National Nuclear Security Administration, along with revelations that officials discussed sensitive information on Signal, might increase allies' concerns about the safety and security of nuclear weapons based in Europe.⁵⁶ While neither of these events is directly related to forward nuclear deployments or nuclear sharing, they could be seen as a worrying trend of an increasingly lax approach toward nuclear safety and information security in the US. The mere perception of a less responsible or capable US could erode allied confidence that hosting American nuclear weapons augments—rather than undermines—that country's national security.

Conclusion

Do NATO allies have a veto over the use of American nuclear weapons stationed in Europe? Officially, NATO maintains a policy of consensus decision-making, with NPG approval needed before a NATO nuclear mission can go forward. Practically speaking, however, non-host allies have few effective means of preventing unilateral nuclear use by the US. Host states have traditionally received more commitments on preventative control and have more tools at their disposal—for example, during the Cold War, the US negotiated bilateral joint authorization agreements with at least three host states, and nuclear hosts were recognized in NATO as having "special status" when considering nuclear use. Through control of delivery systems, personnel, and airspace, host states gain some practical means of obstructing unwanted nuclear use, but it remains debatable whether this

50 Frances Mao, "Can Europe Still Count on the US Coming to Its Defence?" *BBC*, February 26, 2025, <https://www.bbc.co.uk/news/articles/c0l1w1w41xzo>.

51 Erica L. Green, Eric Schmitt, David E. Sanger, and Julian E. Barnes, "Trump Suspends Military Aid to Ukraine After Oval Office Blowup," *The New York Times*, March 3, 2025, <https://www.nytimes.com/2025/03/03/us/politics/trump-ukraine-military-aid.html>.

52 Laura Kayali, "Trump Doesn't Rule Out Military Intervention in Greenland—Again," *POLITICO*, March 30, 2025, <https://www.politico.eu/article/usa-donald-trump-military-intervention-greenland-again-denmark/>; Allan Smith and Peter Nicholas, "Trump's Quest to Conquer Canada Is Confusing Everyone," *NBC News*, March 14, 2025, <https://www.nbcnews.com/politics/donald-trump/trump-quest-conquer-canada-confusing-everyone-rcna195657>.

53 Elena Giordano, "Trump Threatens EU and Canada with Even Bigger Tariffs as Trade War Snowballs," *POLITICO*, March 27, 2025, <https://www.politico.eu/article/trump-threatens-eu-and-canada-with-more-tariffs-if-they-cooperate-against-the-u-s/>.

54 Agencies, "Trump Casts Doubt on Willingness to Defend Nato Allies 'If They Don't Pay,'" *The Guardian*, March 7, 2025, <https://www.theguardian.com/us-news/2025/mar/07/donald-trump-nato-alliance-us-security-support>; James FitzGerald, "Trump Says He Would 'Encourage' Russia to Attack Nato Allies Who Do Not Pay Their Bills," *BBC*, February 11, 2024, <https://www.bbc.co.uk/news/world-us-canada-68266447>.

55 Lauren Sukin, Michal Smetana, Marek Vranka, and Ondrej Rosendorf, "Are the United States and Europe Still Allies? The European Public Doesn't Think So," *Bulletin of the Atomic Scientists*, March 26, 2025, <https://thebulletin.org/2025/03/are-the-united-states-and-europe-still-allies-the-european-public-doesnt-think-so/>.

56 Jeffrey Goldberg and Shane Harris, "Here Are the Attack Plans that Trump's Advisers Shared on Signal," *Atlantic Monthly*, March 26, 2025, <https://www.theatlantic.com/politics/archive/2025/03/signal-group-chat-attack-plans-hegseth-goldberg/682176/>; Rene Marsh and Ella Nilsen, "Trump Officials Fired Nuclear Staff Not Realizing They Oversee the Country's Weapons Stockpile, Sources Say," *CNN*, February 15, 2025, <https://www.cnn.com/2025/02/14/climate/nuclear-nnsa-firings-trump/index.html>.



amounts to a full-scale bilateral veto in the face of determined US use.

These arrangements thus pose a potential dilemma for the alliance: Consensus undermines the credibility of the nuclear weapons on their soil, but enhancing credibility could raise the risk of American nuclear use emanating from Europe that is unwanted by NATO allies.

Two factors may draw out this dilemma within NATO countries and amplify political debates over nuclear sharing arrangements. First, today's insecure strategic environment has increased the salience of nuclear weapons, which creates conditions for politicians and citizens in NATO ally states to be more interested in the authorization procedures

of the weapons stationed in their countries and on the territory of their neighbors. Second, the Trump administration's stance toward NATO and Europe has eroded a factor that has been necessary to hold NATO nuclear sharing together: trust in the US—trust that the US will use these weapons to defend allies, trust that the US will keep to their agreements on consensus and consultation, and trust in US responsibility in administering its nuclear arsenal all matter greatly. Without trust in the US, NATO allies will not be assured of either credibility or consensus. ●

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Latin America and Contemporary Nuclear Challenges

J. Luis Rodriguez

Latin American approaches to managing nuclear risks emphasize communal efforts promoting arms control, disarmament, and the irreversibility of nuclear nonproliferation. For these countries, nuclear weapons are not necessary for their security but, instead, represent the primary source of nuclear risks, regardless of who possesses them or how a possessor behaves. As a result, these countries have decided not to acquire these arsenals—but this decision is not automatic. Latin American countries have used the regional and global nonproliferation regimes to lock in this calculus and secure their access to peaceful atomic technologies. It would be a mistake, however, to take these institutions for granted and assume that they will keep managing nuclear risk automatically. The regional approaches may face challenges stemming from the intrinsic difficulties of utilizing peaceful nuclear technologies, the modernization efforts of nuclear powers, and escalating geopolitical tensions among great powers, especially if arms races extend to Latin America.

Is the world entering a new nuclear age? On August 1, 2024, Vipin Narang, acting assistant secretary of defense for space policy at that time, stated that the US government is preparing for a new era of nuclear contest. He argued that three factors—“coordinated adversarial behavior, the plausibility of limited nuclear employment, and the failure of arms control efforts”—force the United States to adopt a competitive strategy similar to the Cold War.² While Narang emphasized the potential novelty of this age, the urgency to step back from the nuclear brink is not new. During the Cold War, international society faced nuclear crises in which adversaries coordinated their positions, nuclear deployment seemed feasible, and arms control appeared

to fail. During the Cold War, nuclear-armed states were not the only countries that attempted to constrain great powers’ competition, show restraint, and reduce nuclear risks. Latin America also responded to the “ordering imperative” that nuclear weapons posed.³ In today’s potentially novel environment, Latin America might face similar imperatives again.

Latin America had a first-row seat to the dangers of nuclear arsenals during the Cuban Missile Crisis in October 1962. To manage this challenge, Latin American governments constituted a regional nuclear order guaranteeing their access to peaceful atomic technologies.⁴ This order also prioritized removing the area from a logic based on nuclear deterrence and the fear of a potential nuclear war. Instead of developing nu-

1 Reja Younis, “A New Nuclear Age?” *Center for Strategic and International Studies*, August 20, 2024, <https://www.csis.org/analysis/new-nuclear-age>.

2 “Nuclear Threats and the Role of Allies: A Conversation with Acting Assistant Secretary Vipin Narang,” *Center for Strategic and International Studies*, August 1, 2024, <https://www.csis.org/analysis/nuclear-threats-and-role-allies-conversation-acting-assistant-secretary-vipin-narang>.

3 William Walker, “Nuclear Order and Disorder,” *International Affairs* 76, no. 4 (2000): 705, <https://doi.org/10.1111/1468-2346.00160>.

4 Mónica Serrano, *Common Security in Latin America: The 1967 Treaty of Tlatelolco*, research papers, University of London, Institute of Latin American Studies 30 (1992).

clear arsenals or asking for the protection of a nuclear-armed state, Latin American countries prohibited the proliferation and stationing of nuclear weapons in the region. They also secured nuclear-armed states' commitments, such as denuclearizing their territories in Latin America, extending negative security assurances, and constraining nuclear deployments to the region.

Since then, Latin America has usually approached nuclear challenges communally, favoring confidence-building approaches. The region has constructed an architecture of nuclear governance with the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean—commonly known as the Treaty of Tlatelolco—as its baseline. With this treaty, Latin American countries constituted the first nuclear weapon-free zone (NWFZ) in a densely populated area by renouncing their prerogatives to build, acquire, and store nuclear weapons. Tlatelolco became a testament to the region's quest to create alternatives to nuclear deterrence while establishing a right to equitable access to peaceful nuclear technologies.⁵ These states have also partnered with the International Atomic Energy Agency (IAEA) to build verification and safeguards measures, asking the IAEA to work with regional organizations in managing nuclear risks.⁶

Origins of the Latin American Nuclear Approach

After the Cuban Missile Crisis in 1962, Latin American governments recognized that nuclear arms races brought the probability of destruction to their region. They wanted to ban nuclear weapons in Latin America and the Caribbean to avoid global annihilation from starting in their vicinity, but fault lines emerged around how to conceptualize and operationalize such a prohibition.⁷ Certain applications of atomic technologies, like nuclear explosions for infrastructure projects, and some governance goals, like prohibiting maritime nuclear transit, divided the NWFZ architects.⁸ After months of negotiations and concessions, Tlatelolco opened for signatures in February 1967. To back up their commitments, Latin American states built a verification architecture that could help them address

proliferation fears, given the dual-use nature of these technologies. Tlatelolco aimed to modify the Cold War nuclear status quo in the region. The initial challenge for this project was to convince enough countries to join the NWFZ, especially those with latent capabilities, such as Argentina, Brazil, and Chile. These states joined Tlatelolco in the 1990s after they transitioned to democracies and the Cold War ended.

Latin American nuclear ordering actions did not stop at the region's edge. These countries successfully extrapolated some elements of Tlatelolco into the Nuclear Non-Proliferation Treaty (NPT), helped by the fact that the negotiations building these treaties happened during the same years. Representatives from Brazil and Mexico—the only two Latin American countries in the exclusive initial NPT negotiations—actively suggested Tlatelolco as a precedent that the NPT negotiators should emulate.⁹ These diplomatic teams faced nuclear-armed states who were reluctant to balance different nuclear logics and requirements, such as deterrence, disarmament, and development. As a result, the NPT, in contrast with Tlatelolco, froze the global distribution of nuclear weapons status, while extending a commitment to promote development and a pledge to start disarmament talks.¹⁰

The Latin American approach to managing nuclear risks has focused on promoting the irreversibility of nonproliferation. These countries have decided not to acquire nuclear weapons, but this decision was not automatic. Several countries, including Argentina, Brazil, Chile, and Cuba, did not join the NPT or Tlatelolco until after the end of the Cold War in the 1990s, when most countries in the region transitioned to democracy. While neither Argentina nor Brazil developed nuclear warheads, both countries had nuclear programs with the potential for military applications during the Cold War. Moreover, they were not the only countries with internal factions asking for weaponization. Chile and Mexico decided against developing nuclear weapons programs despite pressures from their militaries.¹¹ Ultimately, the regional and global nonproliferation regimes locked in these countries' calculus that nuclear weapons are not necessary for their security and, instead, represent the primary source of nuclear risks.¹²

5 J. Luis Rodriguez and Elizabeth Mendenhall, "Nuclear Weapon-Free Zones and the Issue of Maritime Transit in Latin America," *International Affairs* 93, no. 3 (2022): 819–36, <https://doi.org/10.1093/ia/iiaa055>.

6 See the section on the treaty's verification and compliance in "Tlatelolco Treaty," Nuclear Threat Initiative, <https://www.nti.org/education-center/treaties-and-regimes/treaty-prohibition-nuclear-weapons-latin-america-and-caribbean-lanwzf-tlatelolco-treaty/>.

7 Renata Keller, "The Latin American Missile Crisis," *Diplomatic History* 39, no. 2 (2015): 195–222, <https://doi.org/10.1093/dh/dht134>.

8 Rodriguez and Mendenhall, "Nuclear Weapon-Free Zones and the Issue of Maritime Transit in Latin America."

9 J. Luis Rodriguez, "Mexico and the Balancing of Nuclear Perils and Promises in the 1960s," *Cold War History* (2025), 1–22, <https://doi.org/10.1080/14682745.2024.2404835>.

10 Jonathan R. Hunt, *The Nuclear Club: How America and the World Policed the Atom from Hiroshima to Vietnam* (Stanford University Press, 2022).

11 Etel Solingen, "The Political Economy of Nuclear Restraint," *International Security* 19, no. 2 (1994): 126–69, <https://doi.org/10.2307/2539198>.

12 J. Luis Rodriguez, "Arms Control Lessons from Latin America," *The Washington Quarterly* 47, no. 4 (2024): 177–93, <https://doi.org/10.1080/0163660X.2024.2435723>.

Latin American countries have also built a robust verification approach to guarantee nonproliferation and denuclearization in the region. Tlatelolco conditions members to have a safeguards agreement with the IAEA to adhere to the treaty fully. To operationalize this condition, the IAEA cooperates with regional organizations such as the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL) and the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC). Even though Brazil and Argentina have not signed an additional protocol with the IAEA, ABACC has full access to their nuclear facilities to enforce verification and safeguards measures.¹³ Thus, the region has a comprehensive system to verify the peaceful use of all nuclear materials.

Latin America also presents a model for managing potential competition between countries with latent nuclear capabilities. Argentina and Brazil challenged the Tlatelolco regime by not initially adhering to the treaty, but their model of bilateral nuclear security agreements helped overcome potential rivalries and manage nuclear risks. This model began when the two countries—both military dictatorships during the Cold War—sought to deal with the growing restrictions of the international nonproliferation regime.¹⁴ They therefore engaged in a process of confidence building that relied on verification measures and instruments. In 1980, they signed the Agreement for the Peaceful Use of Nuclear Energy, which created a nuclear cooperation mechanism promoting reciprocal supply and technical cooperation, nuclear common safety procedures, and criteria for the protection of fissile materials.¹⁵ The two countries paired this technical cooperation with diplomatic coordination in international fora to face restrictions, especially regarding nuclear materials and equipment supply.¹⁶

The technical cooperation-diplomatic coordination method gained importance when Argentina and Brazil transitioned to democracies. The democratic

administrations of both countries in the mid-1980s added a more explicit political dimension to their bilateral nuclear policies, relying on verification to guarantee the demilitarization of their enterprises. The Argentine and Brazilian governments organized several periodic meetings to achieve this end, including presidential visits to each country's installations. During the second half of the 1980s, they created institutions to strengthen verification and confidence-building programs—for example, the opening of more nuclear installations to reciprocal visits. During this process, the countries constantly worked together to guarantee transparency and the peaceful nature of their atomic enterprises.¹⁷

As noted earlier, Argentina and Brazil created a bilateral organization to monitor their nuclear commitments. ABACC verifies the peaceful nature of these countries' atomic activities. Argentina, Brazil, ABACC, and the IAEA also signed a four-party agreement in 1991 to create a system for safeguards and verification, strengthening their commitment to respect and fully adhere to the nonproliferation regime. ABACC can even conduct impromptu inspections without prior notification. Some experts from Latin America recommend this dual approach—partnering with international organizations and building a regional architecture—as a robust method to verify denuclearization beyond Latin America.¹⁸

Ultimately, Argentine and Brazilian collaboration with the IAEA allowed both countries to ratify Tlatelolco in 1994. Article 13 of this treaty requires state parties to have safeguard agreements with the IAEA. The Argentine and Brazilian commitments helped to move “toward completion of the Latin American NWFZ,” especially by strengthening and deepening their nonproliferation, safeguards, and verification obligations.¹⁹ Moreover, the Argentine and Brazilian adhesion to Tlatelolco also helped increase and heighten the cooperation between the IAEA and OPANAL in conducting verification and inspection

13 In 1982, writing for the IAEA Bulletin, OPANAL's secretary general pointed to the need to improve safeguards capabilities to enable “all Member States to benefit as soon as possible from the enormous potential offered by the use of nuclear energy for peaceful purposes.” Since then, Latin America has built and strengthened its verification architecture to guarantee their freedom to develop and freedom from fear. See J. R. Martínez Cobo, “The Nuclear-Weapon-Free Zone in Latin America,” *IAEA Bulletin* 24, no. 2 (1982): 58, <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull24-2/24203595659.pdf>.

14 Carlo Patti, “Weapons of Mass Destruction: Will Latin America Backtrack?,” in *Routledge Handbook of Latin American Security*, ed. David R. Mares and Arie M. Kacowicz (Routledge, 2016).

15 Digitized versions of the original documents can be found in “Agreements and Statements,” ABACC, <https://www.abacc.org.br/en/agreements-and-statements/>.

16 Rodrigo Mallea, Matias Spektor, and Nicholas J. Wheeler, *The Origins of Nuclear Cooperation: A Critical Oral History Between Brazil and Argentina* (Wilson Center, 2015).

17 Carlo Patti, *Brazil in the Global Nuclear Order, 1945–2018* (Johns Hopkins University Press, 2021).

18 Verification “is crucial—either through an extension of the IAEA's functions or through the creation of a specific organization with full access to all nuclear programs of nuclear-weapon states.” See Leonardo Bandarra, “Towards a Global Zero for Nuclear Weapons: Three Lessons from Latin America,” GIGA Focus Global, no. 3, 2019, <https://www.giga-hamburg.de/en/publications/giga-focus/towards-a-global-zero-for-nuclear-weapons-three-lessons-from-latin-america>.

19 John R. Redick, “Regional Verification and the Integration of Latin America into the Non-Proliferation Regime,” in *Verification 1996: Arms Control, Peacekeeping, and the Environment*, ed. J. B. Poole (Routledge, 1997).

activities. The effect of this partnership was to create a verification system that, according to some analysts, might be “more comprehensive in the inspection of safeguards than the present nonproliferation international regime” since it responds to bilateral, regional, and international standards simultaneously.²⁰

Apart from Tlatelolco and the NPT, the region has a track record of cooperating to strengthen the global nuclear order. All but one country in Latin America, Dominica, have signed and ratified the Comprehensive Nuclear-Test-Ban Treaty (CTBT). While the CTBT remains unenforced, the Latin American countries see the anti-nuclear-test regime as an instrument to prove nonproliferation and disarmament commitments. The CTBT Organization (CTBTO) has actively helped these countries to build and strengthen their political, legal, and technological verification capacities. In turn, these countries have facilitated the operation of CTBTO monitoring facilities, with Argentina (9), Brazil (7), and Chile (7) hosting the highest number of stations in Latin America.²¹

Potential Nuclear Risks Emerging from Latin America

Latin American approaches to managing nuclear risks and promoting safety have helped strengthen the global nuclear order. As a result of their historical experiences, Latin American countries see nuclear weapons as the primary source of nuclear risk. These countries have worked to address regional challenges on their own terms and have expressed concern about the actions and policies of states possessing nuclear arsenals. Challenges could emerge from the region, however, given the military, medical, and energy applications of nuclear technologies, and potential geopolitical tensions could test the region's nonproliferation calculus, especially if arms races extend to Latin America.

In December 2021, Brazil started a process to fulfill a long-standing attempt to develop nuclear-powered submarines. The administration of former Brazilian

president Jair Bolsonaro informed the IAEA that the country wanted to start talks on using nuclear material under safeguards in propulsion and the operation of submarines. These conversations began in June 2022 and have continued under the presidency of Luiz Inácio Lula da Silva.²² Worries about this development come as Australia, the United Kingdom, and the United States have established a security framework (commonly known as AUKUS) to share nuclear-powered submarines, which could lead to an expansion of this technology and create potential proliferation risks.²³ To calm fears, Brazil has restated its commitment to nonproliferation. The Lula administration has confirmed that “nuclear material will not be used for the production of nuclear weapons or other nuclear explosive devices.”²⁴ Regional verification practices, however, might need to be adapted to monitor these new capabilities if and when they emerge.

Nuclear safety challenges might also arise since Latin America is taking increasing advantage of the peaceful applications of nuclear technology. To prevent and address risks, governments in the region have partnered with international organizations such as the IAEA as well as private companies to improve capacity. For example, to manage the hazards associated with using and transporting radiological materials, countries have worked together to improve their standards through the Ibero-American Forum of Radiation and Nuclear Safety Regulatory Agencies, known as FORO, since 1997. Member states have focused primarily on developing and improving verification, radiation, waste, and transport safety measures.²⁵ They exchange information and experiences and work toward harmonizing safety practices. FORO works closely with the IAEA, formalizing this cooperation through operational arrangements that help member states share policies. Latin American countries have also started talks on training operators and inspectors, regulating shifts, and setting decision-making protocols for crises.²⁶

20 Clovis Brigagão and Marcelo F. Valle Fonrouge, “A Regional Model of Confidence Building for Nuclear Security in Argentina and Brazil,” *The International Journal of Peace Studies* 3, no. 2 (1998): 99–108, https://www3.gmu.edu/programs/icar/ijps/vol3_2/Brigagao.htm.

21 Preparatory Commission, “Latin America and the CTBT—A Strong Partnership,” CTBTO, 2022, https://www.ctbto.org/sites/default/files/2022-08/lac_e.pdf.

22 Matias Spektor, “The Evolution of Brazil's Nuclear Intentions,” *The Nonproliferation Review* 23, nos. 5–6 (2016): 635–52.

23 Toby Dalton and Ariel Levite, “AUKUS as a Nonproliferation Standard?,” *Arms Control Association*, July 10, 2023, <https://www.armscontrol.org/act/2023-07/features/aukus-nonproliferation-standard>.

24 IAEA, “Naval Nuclear Propulsion: Brazil,” report by the director general, GOV/INF/2023/11, May 31, 2023, <https://www.iaea.org/sites/default/files/documents/govinf2023-11.pdf>. Brazilian researchers have argued that Brazil's quest to master this technology is part of a project aimed at modernizing the Brazilian economy and gaining international influence, not an effort to develop nuclear weapons. See Renata H. Dalaqua, “We Will Not Make the Bomb Because We Do Not Want to Make the Bomb: Understanding the Technopolitical Regime That Drives the Brazilian Nuclear Program,” *The Nonproliferation Review* 26, nos. 3–4 (2019): 231–49, <https://doi.org/10.1080/10736700.2019.1630094>.

25 Members include Argentina, Brazil, Chile, Colombia, Mexico, Paraguay, Peru, Portugal, Spain, and Uruguay.

26 Joanne Burge, “New Regulators from Latin America and Caribbean Trained in Radiation Safety and Nuclear Security,” IAEA, November 30, 2023, <https://www.iaea.org/newscenter/news/new-regulators-from-latin-america-and-caribbean-trained-in-radiation-safety-and-nuclear-security>. For more information, visit FORO's website at <https://foroiberam.org/>.

Latin America has explored nuclear energy sparsely. Argentina, Brazil, and Mexico are the only countries with nuclear power plants in the region, and nuclear power represents a small component of their respective energy matrices. At the same time, some Latin American countries are at the forefront of nuclear research and design innovation. The National Atomic Energy Commission of Argentina is developing small modular reactors (SMRs) for electrical power generation.²⁷ These SMRs could service all of Argentina, and advancing the design of a commercial SMR module could potentially service other states.²⁸

The management and disposal of nuclear waste could also bring new risks for the region to manage if the use of peaceful nuclear technologies increases. Nuclear waste in the region has low or very low levels of radiation. Governments usually centralize nuclear waste management through state-run institutions and use near-surface or open-source repositories with engineering barriers, either on-site for power plants or in a centralized location for waste produced via medical applications. While SMRs reduce some of the safety risks associated with power plants, they present challenges regarding the disposal of the reactive waste they produce. SMRs could also increase the quantities of waste, multiplying the challenges associated with its disposal.²⁹

Geopolitical tensions between the United States and China could create new diplomatic and security risks for Latin America. While countries in the region have traditionally sought US technology transfers to improve their capabilities, they have deepened their technological collaboration with China in recent years. In the nuclear power realm, China has offered its nuclear cooperation to the region. Only Argentina has partnered with China to build nuclear power plants so far, but despite this limited nuclear power collaboration, Latin American governments argue that China is a viable, sometimes indispensable, partner for enhancing their scientific capabilities. US officials, however, portray these technological partnerships as a potential threat.³⁰

Beyond diplomatic tensions, Latin America–China technological cooperation could make the region a

potential site for US–China conflicts. Some US analysts interpret China’s outreach to Latin America as “a strategic move to extend [China’s] military reach closer to US boundaries,”³¹ especially by constructing dual-use systems. For instance, China is building and running space ground-control sites in South America to track and command spacecraft and for data acquisition. Beijing has two telemetry, tracking, and control sites in Argentina and one in Chile. China argues that this network is necessary for scientific exploration and helps the host nation build technological capacities essential for economic development.

US analysts worry that this network could improve China’s knowledge of US space operations and capacities to deploy and guide hypersonic missiles over the Western hemisphere. They point out that China’s military–civil fusion and its policy of limiting access and oversight to the host country raise concerns about the military use of these scientific and commercial installations. The analysts further argue that Argentina’s and Chile’s current arrangements could help China exploit these stations without these countries’ control or even acquiescence. Argentina and Chile might be unable to sever space-collaboration ties with China, as some countries like Sweden have done.³² Instead, these countries could revise their existing agreements to include more oversight and transparency to deter and detect unknown military activities.

Novel Nuclear Dynamics and Challenges

Latin American countries have grown increasingly frustrated about the slow pace of global nuclear disarmament. During the original NPT negotiations in the 1960s, the region advocated for eliminating nuclear weapons, but ultimately accepted the commitment of nuclear-armed states to reducing their nuclear arsenals over time. Today, Latin American countries argue that they and most non-nuclear-weapon states have held their side of the NPT bargain by respecting their nonproliferation commitments. They

27 For an explanation on small modular reactors, see Joanne Liou, “What Are Small Modular Reactors (SMRs)?,” *Nuclear Explained*, International Atomic Energy Agency, <https://www.iaea.org/newscenter/news/what-are-small-modular-reactors-smrs>.

28 See <https://www.argentina.gob.ar/argentinian-nuclear-power-plant#6>.

29 Lindsay M. Krall, Allison M. Macfarlane, and Rodney C. Ewing, “Nuclear Waste from Small Modular Reactors,” *Proceedings of the National Academy of Sciences* 119, no. 23 (2022): 1–12, <https://doi.org/10.1073/pnas.2111833119>.

30 Laura J. Richardson, “Statement of General Laura J. Richardson, Commander of the US Southern Command, before the 118th Congress, House Armed Services Committee,” March 12, 2024, <https://www.southcom.mil/Media/Special-Coverage/SOUTHCOMs-2024-Posture-Statement-to-Congress/>.

31 Guido L. Torres and Laura Delgado López, “Space, Speed, and Sovereignty: Hypersonic Tensions in the Southern Hemisphere,” Center for International Security and Cooperation, May 21, 2024, <https://www.csis.org/analysis/space-speed-and-sovereignty-hypersonic-tensions-southern-hemisphere>. See also Laura Delgado López, “Orbital Dynamics: The Domestic and Foreign Policy Forces Shaping Latin American Engagement in Space,” Center for Strategic and International Studies, July 23, 2024, <https://www.csis.org/analysis/orbital-dynamics-domestic-and-foreign-policy-forces-shaping-latin-american-engagement>.

32 Torres and Delgado López, “Space, Speed, and Sovereignty.”

contend that nuclear-armed states, in contrast, are backtracking on their disarmament obligations by modernizing and expanding their nuclear arsenals.³³

Latin American countries have expressed concerns about the actions and policies of nuclear countries. They track developments not only in nuclear-armed countries but also in nuclear umbrella states and those hosting these weapons in their territory. At the 2022 NPT Review Conference, for example, several Latin American delegations publicly objected to nuclear-armed states modernizing and expanding their nuclear arsenals. At the 2023 NPT Preparatory Committee, the delegations presented concerns about the increasing number of countries hosting nuclear weapons.³⁴ Parallel to its NPT responsibilities, Latin America has supported efforts to build new commitments to control and ban nuclear arsenals to address this challenge.³⁵

Despite their apprehensions, most Latin American governments have a policy of avoiding naming and shaming specific countries for their nuclear behaviors. The region has not collectively criticized Russia for nuclear saber-rattling during its invasion of Ukraine. Some individual countries have explicitly named and objected to that behavior: Chile, for example, has publicly denounced Russia since 2022, and Ecuador has condemned Russia at the UN Security Council for allegedly planning to deploy tactical nuclear weapons in Belarus.³⁶ But most Latin American countries have used multilateral nuclear architectures to instead condemn all explicit and implicit nuclear threats, without naming Russia overtly.

Only as nuclear-armed states have moved from rhetoric to planning nuclear attacks have Latin Amer-

ican countries reacted more forcefully. For example, OPANAL resolutions for the past few years have not mentioned Russia by name.³⁷ On May 6, 2024, however, Russia announced that it was planning to conduct military exercises to test practical aspects of the preparation and use of nonstrategic nuclear weapons.³⁸ In response, OPANAL members published a joint communiqué denouncing nuclear saber-rattling and all instances leading to potential nuclear escalation—but again, did not name Russia.³⁹

Latin American states argue that their denouncing strategy relies on the premise that nuclear weapons are the primary source of nuclear risks, not nuclear-armed states themselves. In other words, this strategy condemns the weapon, not the country.⁴⁰ As such, Latin America's most recent nuclear governance goal has been to support the Treaty on the Prohibition of Nuclear Weapons (TPNW), which asks to ban nuclear arsenals due to the potential humanitarian and environmental consequences of nuclear wars.⁴¹ Latin American countries have used the momentum generated by the TPNW to press for more ambitious disarmament goals. They have pointed out the dangers of prioritizing nuclear arsenals in national security strategies, expressing growing anxiety about the United States, Russia, and China expanding and modernizing their nuclear arsenals. Leaders in Latin American countries perceive this as nuclear-armed states backtracking and conditioning their disarmament progress on having more effective nuclear arsenals.⁴²

Latin American governments have also supported the strengthening and creation of new NWFZs. They see these governance commitments as nuclear risk-reduction measures and tools to disarm the

33 Christopher Dunlap, "Disarmament over Deterrence: Nuclear Lessons from Latin America," *Bulletin of the Atomic Scientists*, August 1, 2018, <https://thebulletin.org/2018/08/disarmament-over-deterrence-nuclear-lessons-from-latin-america/>.

34 Hanna Notte, "Russia, the Global South and the Mechanics of the Nuclear Order," *Survival* 66, no. 3 (2024): 49–57, <https://doi.org/10.1080/00396338.2024.2357480>.

35 Sergio Duarte, "The Contribution of Latin America and the Caribbean to Multilateral Nuclear Nonproliferation and Disarmament," *Peace Review* 36, no. 2 (2024): 190–99, <https://doi.org/10.1080/10402659.2024.2331724>.

36 Heather Williams and J. Luis Rodriguez, "Debating Global South Reactions to Russian Nuclear Threats," Center for Strategic and International Studies, July 30, 2024, <https://www.csis.org/analysis/debating-global-south-reactions-russian-nuclear-threats>.

37 See, for example, OPANAL, "Interpretative Declarations Made by States Parties to the Additional Protocols I and II to the Treaty of Tlatelolco," CG/Res.01/2023, November 3, 2023.

38 Pavel Podvig, "Quieting the Nuclear Rattle: Responding to Russia's Tactical Nuclear Weapons Exercises," European Leadership Network, May 29, 2024, <https://europeanleadershipnetwork.org/commentary/quieting-the-nuclear-rattle-responding-to-russias-tactical-nuclear-weapons-exercises/>.

39 The document condemns "the threats of use of nuclear weapons, irrespective of their class or location" and "the increased operational alertness of nuclear arsenals" and calls for "nuclear weapons not to be used again irrespective of the circumstances by any actor, and under any circumstances." See OPANAL, "Communiqué of the Member States of the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL) Related to the Threat of Use of Nuclear Weapons," July 16, 2024, https://opanal.org/wp-content/uploads/2024/07/Inf_23_2024_Rev4-Communique-of-the-Member-States-related-to-the-potential-use-of-nuclear-weapons-final-16jul2024.pdf.

40 Rodriguez, "Arms Control Lessons from Latin America."

41 For a detailed explanation of the mobilization of humanitarian arguments in disarmament efforts, see Rebecca Davis Gibbons, "The Humanitarian Turn in Nuclear Disarmament and the Treaty on the Prohibition of Nuclear Weapons," *The Nonproliferation Review* 25, nos. 1–2 (2018): 11–36, <https://doi.org/10.1080/10736700.2018.1486960>. See also Naomi Egel and Steven Ward, "Hierarchy, Revisionism, and Subordinate Actors: The TPNW and the Subversion of the Nuclear Order," *European Journal of International Relations* 28, no. 4 (2022): 751–76, <https://doi.org/10.1177/13540661221112611>.

42 Rodriguez, "Can the NPT Fulfill Its Promise to Eliminate Nuclear Weapons?," *The Washington Post*, August 1, 2022, <https://www.washingtonpost.com/politics/2022/08/01/npt-nuclear-weapons-disarmament/>.

world gradually.⁴³ Latin American countries have favored creating a Middle Eastern NWFZ to guarantee nonproliferation and disarmament. Although they recognize that some Middle Eastern countries might not initially join this effort, they point to their experience creating a successful NWFZ gradually: Argentina, Chile, Cuba, and Brazil did not fully join the Latin American zone until the 1990s, decades after the treaty creating this mechanism opened for signatures. As the UN has hosted efforts to establish a Middle Eastern zone free of weapons of mass destruction,⁴⁴ participants have recognized the value of the Latin American ascension formula. Egypt, for example, has stated that ratifying nations do not have to be part of a regional zone from the outset,⁴⁵ opening the door for potentially innovative ways of constructing new governance architectures.

Conclusion

Latin American approaches to managing nuclear risks favor communal efforts based on multilateralism and international law. These countries have built nuclear institutions to secure their legal access to peaceful atomic technologies that promote industrialization. They have worked with international organizations to ensure that they can benefit from these tools and knowledge, in areas ranging from medical applications to energy production, while sharing best practices for the safe use, transport, and disposal of these technologies and materials.⁴⁶ At the same time, Latin American states see nuclear weapons as the main source of nuclear risks, regardless of who possesses them or how a possessor behaves. They perceive the actions by nuclear-armed states—which are modernizing, expanding, and threatening to use their nuclear arsenals—as well as the prospect of countries considering acquiring nuclear weapons, as dangers.

To face these problems, Latin American countries posit that the most efficient strategy to prevent the

dawn of a new nuclear age would be to ban nuclear weapons. They have therefore promoted strengthening disarmament and nonproliferation responsibilities to sustain the global nuclear order, pushing for stronger bilateral and multilateral commitments promoting nonproliferation, arms control, and disarmament. They have built regional architectures to lock these obligations in and cooperated with international organizations to strengthen their nonproliferation obligations.

Latin America has relied on the nonproliferation regime to promote security, but it would be a mistake to take these institutions for granted and assume that they will keep managing nuclear risk automatically. To complement existing efforts, Latin American governments must also open channels for dialogue on addressing nuclear risks. A step in this direction happened in April 2024, when Latin American officials met for the first time with the Western hemisphere's only nuclear-armed state, the United States, and the country under its nuclear umbrella, Canada, to discuss potential nuclear risk-reduction policies.⁴⁷ Latin American countries must also invest in training the next generation of nuclear experts to maintain the region's nonproliferation architecture.⁴⁸ As the global nuclear order faces new and evolving challenges, Latin America's communal approach will offer important insights into managing these emerging nuclear risks. ●

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43 "Nuclear-Weapon-Free Zones as Nuclear Risk Reduction Measure," working paper submitted by the states parties to the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, June 3, 2024, <https://digitallibrary.un.org/record/4051596?v=pdf>.

44 Documents about the Conference on the Establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction can be accessed at <https://disarmament.unoda.org/topics/conference-on-a-mezf-of-nwandowomd/>.

45 "Statement by the Delegation of the Arab Republic of Egypt at the Conference on the Establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction," Permanent Mission of Egypt to the United Nations in New York, November 18–22, 2019.

46 The region has improved their global nuclear security index in the latest report from Nuclear Threat Initiative: "Nuclear Security Index: Falling Short in a Dangerous World," Nuclear Threat Initiative, July 2023, https://www.ntiindex.org/wp-content/uploads/2023/07/2023_NTI-Index_Report.pdf.

47 US Department of State, "Nuclear Risk Reduction in the Hemisphere, Mallory Stewart, Assistant Secretary, Bureau of Arms Control, Deterrence, and Stability," Foreign Press Center Briefing, April 24, 2024, <https://www.state.gov/briefings-foreign-press-centers/nuclear-risk-reduction-in-the-hemisphere>.

48 For the last ten years, OPANAL has worked with the Mexican Ministry of Foreign Affairs, the Mexican Diplomatic Academy, and the James Martin Center for Nonproliferation Studies at Middlebury Institute of International Studies at Monterey to run the Summer School on Nuclear Disarmament and Non-Proliferation for diplomats from Latin America and the Caribbean. See "Foreign Ministry Inaugurates 10th Summer School on Nuclear Disarmament and Non-Proliferation," Mexican Ministry of Foreign Affairs, Press Release 248, July 2, 2024, <https://www.gob.mx/sre/prensa/foreign-ministry-inaugurates-10th-summer-school-on-nuclear-disarmament-and-non-proliferation?idiom=en>.



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