

The Nuclear Revolution

Fact of Fiction?

LT COL ELIJAH S. PORTER, USAF

Abstract

For nearly eight decades, nuclear weapons have played a vital role in achieving peace and security through deterrence policies. Simultaneously, they shielded aggressors from third-party intervention, contributing to conflict. This contradiction raises questions about nuclear weapons' true impact on international affairs. Some scholars view nuclear weapons as transformative in statecraft, fostering optimism about security, while others remain skeptical. Thus, this article asks: How revolutionary were nuclear weapons? Further inquiries persist. To what extent does this revolution affect global competition? Can the nuclear revolution's principles adapt to evolving security contexts, and to what extent? This article explores the nuclear revolution's key aspects, examines the contemporary security landscape, and offers conclusions. It argues that the nuclear revolution has validity but acknowledges the complexity of the situation. The evolving security environment introduces more uncertainty than the nuclear revolution suggests.

Many scholars argue the advent of nuclear weapons has caused a revolution in statecraft. In 1955, Winston Churchill observed that, with the hydrogen bomb, “the entire foundation of human affairs was revolutionized, and mankind placed in a situation both measureless and laden with doom.”¹ Robert Jervis, a nuclear deterrence theory expert, authored a comprehensive book on the subject, contending that “nuclear weapons have drastically altered statecraft.”² Writing toward the end of the Cold War, he suggested that nuclear weapons could elucidate various contradictions evident during decades of conflict between the United States and the Soviet Union. These contradictions include the following:

- states possess military might, yet struggle to protect themselves;
- there is no war between great powers, yet states fear total destruction;
- threats are inherently suicidal;

¹ As quoted in footnote 19 in Robert Jervis, *The Meaning of the Nuclear Revolution* (Ithaca, NY: Cornell University Press, 1989), 7.

² Jervis, *The Meaning of the Nuclear Revolution*, 2.

- threats promise devastation without serious provocation;
- and the levels of military arms vary greatly, yet the status quo remains the same.³

According to the nuclear revolution perspective, these contradictions result from the influence of nuclear weapons. Two key points underscore the impact of nuclear weapons on these contradictions. Firstly, nuclear weapons have reshaped statecraft by rendering superior military power ineffective. States cannot reliably use their military superiority to impose their will on other nuclear-armed states. Nuclear weapons serve as a great equalizer in the military balance. Kenneth Waltz notes that “nuclear weapons negate the advantages of conventional superiority because escalation in the use of conventional force risks receiving a nuclear strike.”⁴ Regardless of a military power’s sophistication, the overwhelming destructive potential of a few nuclear weapons negates its advantages. The mere possibility of nuclear retaliation is sufficient to deter superior military forces. In essence, nuclear weapons create mutual vulnerability irrespective of military strength. This was the rationale behind the North Atlantic Treaty Organization’s (NATO) strategy during the Cold War when confronted with the Soviet Union’s superior conventional military force. NATO exploited the Soviet Union’s vulnerability to nuclear attacks, relying on the threat of nuclear retaliation to deter Soviet aggression. This strategy also offered the advantages of being more cost-effective and domestically acceptable compared to maintaining a massive standing military force in Europe to match the Soviet Union.

Nuclear weapons offer a second explanation for the aforementioned contradictions by reshaping statecraft, fostering cooperation among nuclear-armed states. The looming threat of total destruction encourages these states to set aside their conflicting interests. A step in this direction was witnessed in November 2022 when China’s President Xi Jinping and US President Joe Biden engaged in discussions about global and regional challenges. Both leaders concurred that “nuclear war should never be fought and can never be won.”⁵ While China did not provide specific comments on the Ukraine conflict or US concerns about North Korea’s “provocative behavior,” the United States successfully garnered support to ease tensions among nuclear-armed states, including Russia, North Korea, and the

³ Jervis, *The Meaning of the Nuclear Revolution*, 2.

⁴ Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate*, 3rd ed. (London: W.W. Norton & Company, 2012), 32.

⁵ “Readout of President Joe Biden’s Meeting with President Xi Jinping of the People’s Republic of China” (press release, The White House, 14 November 2022, <https://www.whitehouse.gov/>).

United States. This statement may also bolster cooperation by reinforcing norms against nuclear use, as discussed later.

China's recent nuclear arms buildup and provocative actions in the vicinity of Taiwan and the South China Sea have heightened the urgency of cooperation between the People's Republic of China and the United States. China has embarked on the construction of numerous silos for intercontinental ballistic missiles, adding at least 300 as of 2022.⁶ Chinese aircraft have probed Taiwan's air defenses, and they have flown in proximity to US planes in the South China Sea.⁷ President Biden met with President Xi in November 2023 to ease tensions.⁸ There are also plans for nuclear arms control discussions involving lower-level government officials. One US government official hopes that these talks will eventually lead to practical measures to manage strategic risks and engage in a "conversation on mutual restraint in terms of behavior or even capabilities."⁹ All discussions and tensions must proceed with the looming prospect that a misstep or miscalculation related to China's nuclear buildup, Taiwan, or the South China Sea could escalate to the use of nuclear weapons. However, the nuclear revolution argues that the risk of nuclear war acts as a motivator for these discussions. Cooperation becomes imperative for survival, as the alternative could result in annihilation.

According to Jervis, there are several implications of this supposed impact on statecraft.¹⁰ First, the likelihood of peace increases among major powers, as military victory is no longer feasible due to the threat of escalating to total nuclear war. Second, the status quo is more likely to persist, as disrupting it could lead to unpredictable nuclear conflict. Third, once the status quo is established, crises will be infrequent, typically occurring at the peripheral interests of superpowers without disturbing the overall equilibrium. Fourth, the requirements for credible threats are minimal, as "Even a slight chance that a provocation could lead to nuclear war will be sufficient to deter all but the most highly motivated adversaries."¹¹ Some

⁶ *Military and Security Developments Involving the People's Republic of China* (Washington, DC: US Department of Defense, 2023), 66, <https://media.defense.gov/>.

⁷ Amy Chang Chien and Chris Buckley, "China Sends Record Number of Military Planes Near Taiwan," *New York Times*, 18 September 2023, <https://www.nytimes.com/>; and "Department of Defense Releases Declassified Images, Videos of Coercive and Risky PLA Operational Behavior" (press release, Department of Defense, 17 October 2023), <https://www.defense.gov/>.

⁸ Ellen Nakashima, "White House planning face-to-face meeting with Xi Jinping in California," *Washington Post*, 6 October 2023, <https://www.washingtonpost.com/>.

⁹ As quoted in Michael R Gordon, "China, U.S. to Meet for Rare Nuclear Arms-Control Talks," *Wall Street Journal*, 1 November 2023, <https://www.wsj.com/>.

¹⁰ Jervis, *The Meaning of the Nuclear Revolution*, 23-45.

¹¹ Jervis, *The Meaning of the Nuclear Revolution*, 38.

argue that the mere presence of nuclear weapons serves as a deterrent.¹² Consequently, nuclear-armed states are more inclined to compromise to avoid escalation. Finally, the link between military balance and political outcomes becomes tenuous, with military forces having little impact on potential political results. For instance, a more powerful military may acquiesce to the political objectives of a weaker power out of fear of nuclear use.

In summary, the nuclear revolution has transformed the way states interact. States must exercise caution, as situations could escalate to total nuclear war with no victor. Mutual vulnerability has weakened the connection between military forces and political outcomes, enabling political success regardless of military strength.

The Myth or Failure of the Nuclear Revolution

Some scholars, however, cast doubt on the validity of the nuclear revolution, labeling it a myth or a failure.¹³ In essence, they argue that nuclear weapons have not altered the way states interact. They contend that the principal drivers in relations between even nuclear-armed states remain power politics and competition, just as they were before the nuclear era.

Keir A. Lieber and Daryl G. Press express criticism of the nuclear revolution's assertion that mutual vulnerability is an inherent reality, not just a policy choice. They assert that the theory of the nuclear revolution is fundamentally flawed.¹⁴ This theory is purportedly erroneous because nuclear weapons have not brought about sufficient change in statecraft between nuclear-armed states to dissuade them from engaging in intense competitive behaviors. Nuclear-armed states still form potent alliances, participate in arms races, vie for control of strategic territories, and closely monitor shifts in the global balance of power.¹⁵ China is actively modernizing its nuclear forces with new long-range bombers and submarines, while also reorganizing its military to enhance "stronger deterrent, coercive, and joint warfighting capabilities."¹⁶ All these actions indicate that states either disregard or reject mutual vulnerability as a factual constraint and instead seek ways to overcome the stalemate imposed by nuclear weapons.

¹² Bernard Brodie, *War and Politics* (New York: Macmillan: 1973), 412, as cited in Waltz, "Nuclear Myths and Political Realities," *American Political Science Review* 84, no. 3 (September 1990), 738, <https://www.jstor.org/>.

¹³ Keir A. Lieber and Daryl G. Press, *The Myth of the Nuclear Revolution* (Ithaca, NY: Cornell University Press, 2020), 120–24; and Brendan Rittenhouse Green, *The Revolution that Failed* (Cambridge: Cambridge University Press, 2020), 247.

¹⁴ Lieber and Press, *The Myth of the Nuclear Revolution*, 5.

¹⁵ Lieber and Press, *The Myth of the Nuclear Revolution*, 1.

¹⁶ James M. Smith and Paul J. Bolt, eds., *China's Strategic Arsenal* (Washington DC: Georgetown University Press, 2021), 180.

The notion of the nuclear revolution may be viewed as a myth if states have not reached a stalemate. It can take some time for a state to develop nuclear capabilities to stabilize a relationship. Moreover, this stability of the stalemate can be reversed. In other words, once it is achieved, state behavior can lead to a perceived advantage. States fear that others may gain an advantage, prompting them to seek an advantage themselves. In short, power politics still persist in the nuclear age. While the Soviet Union officially claimed a stalemate in Europe due to the risk of automatic nuclear escalation in the event of war, in practice, “the Soviet Union prepared for it, investing hugely, as did NATO, in weaponry that made no sense if war in Europe was bound to go nuclear.”¹⁷ Stalemate did not appear to limit the growth of arsenals, as both the Soviets and Americans continued to develop nuclear weapons throughout the Cold War.

Intense competition persists for primarily four reasons. First, creating a stalemate can be challenging. It may take a considerable amount of time for a state to develop nuclear capabilities to establish a stable relationship. Some states may lack the necessary resources or technical expertise to build forces that lead to mutual vulnerability, such as intercontinental ballistic missiles. Building the required forces for a survivable nuclear deterrent simply takes time.

Second, the stability of a stalemate is not set in stone and can be reversed or escaped. In other words, once achieved, state behavior can lead to military advantage or the perception of advantage. The idea that military superiority is irrelevant is false, as a state could develop technology that creates the perception it has escaped mutual vulnerability. A state may also be motivated to seek an escape from the stalemate if they believe an adversary is attempting to do the same. This could explain why Russia frequently criticizes US missile defense systems and modernizes its own forces, even though the United States has attempted to allay fears that its missile defense systems can defend against Russian nuclear weapons. Russia is likely concerned about the future potential of US missile defense systems rather than the current low number of US interceptors. Russia uses the issue of US missile defense to justify updates to its nuclear arsenal and the development of new nuclear capabilities, such as the nuclear-powered torpedo. Moreover, even if nuclear-armed states could not reverse a stalemate, there remains an incentive to seek military advantage to gain peacetime political benefits.¹⁸

Third, intense competition endures because states may aim to deter major conventional attacks using their nuclear forces. Presently, states like Russia, China, and North Korea rely on nuclear weapons to compensate for weak conventional

¹⁷ Thomas Schelling, “The Thirtieth Year,” *Daedalus* 120, no. 1 (Winter 1991), 30, <https://www.jstor.org/>.

¹⁸ Green, *The Revolution that Failed*, 247–49.

forces.¹⁹ However, this strategy presents a challenge due to the “stability-instability” paradox.²⁰ This paradox posits that while nuclear weapons reduce the likelihood of strategic-level attacks (the stability aspect), they simultaneously increase the likelihood of lower-level attacks, such as conventional ones (the instability aspect). To deter conventional attacks with nuclear weapons, a state purportedly needs to develop a nuclear force capable of credibly engaging at lower levels without immediately resorting to strategic nuclear weapons. In other words, states seek a nuclear force consisting of tactical nuclear weapons to deter conventional attacks. Attempts to deter conventional attacks with nuclear weapons create the perception that a state might break the stalemate, thereby fueling competition. States may build nuclear forces with a wide array of flexible and adaptable options to more credibly threaten the possibility of nuclear escalation. In response, the conventionally superior state will seek ways to counter the other state’s flexible and adaptable nuclear arsenal.

Finally, competition may persist in the nuclear era due to varying strengths and weaknesses among individual states in nuclear competition and cooperation.²¹ This is evident in the differing advantages between the United States and the Soviet Union during the latter part of the Cold War. The United States had advantages in producing high-quality nuclear forces owing to its economic and technological comparative edge. Conversely, the Soviet Union had an advantage in the numerical production of nuclear forces due to its superior resource extraction capacity. The Soviet Union did not grapple with potential political or environmental concerns due to the command economy nature of the Soviet state, allowing them to force high rates of resource extraction. In contrast, the open, democratic system in the United States hindered such extraction. These disparities in comparative advantages, as described, could lead states to view competitive behavior as beneficial. As states focus on their comparative advantage, they could gain political benefits in alignment with their national interests.

In summary, nuclear weapons do not deliver the stability and peace promised by the nuclear revolution. The expected mutual vulnerability, which should encourage caution, does not yield as much caution as anticipated. Caution remains minimal as states vie for advantages.

¹⁹ Keir A. Lieber and Daryl G. Press, “The Return of Nuclear Escalation,” *Foreign Affairs*, 24 October 2023, <https://www.foreignaffairs.com/>.

²⁰ Lieber and Press, *The Myth of the Nuclear Revolution*, 94–97.

²¹ Green, *The Revolution that Failed*, 248.

The New Security Environment

A critique of the theory of the nuclear revolution is that it assumes a bipolar relationship between two superpowers, as seen during the Cold War between the United States and the Soviet Union. However, since the fall of the Soviet Union, the security environment has evolved away from a bipolar world, introducing different complexities. Vipin Narang and Scott Sagan argue that “the theories derived from the Cold War superpower nuclear balance are not applicable to the emerging nuclear landscape.”²² In essence, Cold War logic does not align with the emerging nuclear landscape.

The nuclear revolution promises stability derived from mutual vulnerability, yet it may not be applicable between emerging nuclear powers and their adversaries. Stability may only exist in the context of the United States and Russia. The distinction arises from the fact that emerging states may not draw the same conclusions about the impact of vulnerability, or they may lack the capabilities to create conditions of vulnerability with their adversaries. Emerging states may also question the survivability of their arsenals due to advancements in counterforce technology and the limited number of weapons in their arsenals, which increases the risk of adversaries rendering their nuclear threats meaningless.²³ This situation might lead states to seek advantages through arms races or to fear losing the option to use nuclear weapons during crises. China’s nuclear expansion, often seen as directed at the United States, may also create tensions with India. As China enhances the quantity and responsiveness of its nuclear arsenal, India may become more uncertain about its ability to retaliate. India has always maintained a weaker nuclear force compared to China’s arsenal, and India’s modernization efforts are likely driven by competition with Pakistan. However, India’s intentions and Chinese perceptions may not always align.²⁴ As both China and Pakistan modernize their nuclear arsenals independently, future opportunities and circumstances may change strategies and influence calculations of stability. Assessments of vulnerability may differ once each country has pursued increased nuclear capabilities.

Another reason the nuclear revolution may not apply in the new security environment is that the stakes are different from the Cold War era. During the Cold War, stability may have existed because the stakes were not high enough to risk nuclear

²² Vipin Narang and Scott D. Sagan, eds., *The Fragile Balance of Terror* (Ithaca: Cornell University Press, 2022), 3.

²³ Narang and Sagan, eds., *The Fragile Balance of Terror*, 4.

²⁴ Debak Das, “China’s Missile Silos and the Sino-Indian Nuclear Competition,” *War on the Rocks*, 13 October 2021, <https://warontherocks.com/>.

war.²⁵ The United States and the Soviet Union established different spheres of influence and generally respected those interests. While nuclear weapons may have encouraged cooperation, the two superpowers did not engage in activities that required nuclear threats. Differences in economic and political systems, along with geographical distances, may have contributed to keeping their interests separate. Ultimately, the stakes may not have been high enough to resort to the use of nuclear weapons.

In today's security environment, stakes may be higher between emerging nuclear-armed states and other nuclear-armed states. Consequently, nuclear-armed states may accept more risk today than during the Cold War, and there is a greater potential for vital interests to clash. Evidence of this possibility can be seen in the tension between India and Pakistan. Shortly after conducting nuclear tests, the long-standing dispute over Kashmir erupted into armed conflict in 1999 (the Kargil conflict). In 2019, India became the first nuclear-armed state to use "airpower directly on the undisputed sovereign territory" of another nuclear-armed state when it conducted an airstrike on Balakot, Pakistan.²⁶ Both incidents could have escalated to nuclear conflict as each side sought to defend territorial interests. Further evidence of higher risk tolerance and potential for interests to clash can be observed in the tension between China and the United States over Taiwan. Taiwan is at the center of a territorial dispute with high stakes on both sides. China claims Taiwan is already part of China's sovereign territory, while the United States has consistently committed to defending Taiwan as a de facto independent state. While a departure from long-standing US policy, President Biden has recently affirmed the United States would "get militarily involved to defend Taiwan if it comes to that."²⁷ In such a high-stakes battle for Taiwan, nuclear stability during a conflict becomes uncertain. China could argue that its no-first-use policy does not apply in the case of Taiwan, as China considers reunification an internal matter, or China might resort to nuclear weapons in the face of conventional defeat at the hands of the United States. Furthermore, China might use nuclear weapons with the legitimacy of party rule on the line. To prevent South Korea and Japan from acquiring nuclear weapons, the United States might want to avoid tarnishing its reputation for defending allies and partners. China and the United States may be more willing to accept risk today regarding Taiwan, thus increasing the likelihood of nuclear escalation.

²⁵ Narang and Sagan, eds., *The Fragile Balance of Terror*, 5.

²⁶ Narang and Sagan, eds., *The Fragile Balance of Terror*, 76.

²⁷ Zolan Kanno-Youngs and Peter Baker, "Biden Pledges to Defend Taiwan if It Faces a Chinese Attack," *New York Times*, 23 May 2022, <https://www.nytimes.com/>.

Another concerning aspect of the emerging landscape and its impact on stability is the potential disregard for a nuclear “taboo” by nuclear-armed states. There has been an international norm against the use of nuclear weapons based on their devastating power. Throughout the nuclear era, nuclear-armed states have refrained from using nuclear weapons in tense situations, such as the Korean War, the end of French rule in Vietnam (where the French requested the use of US nuclear weapons), the Taiwan Strait Crisis of 1954-1955, the Cuban missile crisis, the Sino-Soviet Border conflict of 1969, and others. However, the nuclear taboo is facing significant challenges due to “renewed major power rivalry, bellicose rhetoric, fading memories of Hiroshima, and increasing reliance on nuclear weapons in the nuclear states’ military doctrines.”²⁸ Frequent nuclear threats from new nuclear powers like North Korea and Pakistan have raised doubts about the longevity of the tradition of non-use that developed between the United States and the Soviet Union. Recent nuclear threats from Russia during the conflict in Ukraine also cast doubt on the durability of the taboo as Russia expresses its desire to keep Western powers out of the conflict. Pressure against the nuclear taboo also emanates from the United States. President Donald Trump’s “over-the-top” rhetoric in response to North Korean nuclear capabilities and the American public’s not overly strong opposition to the use of nuclear weapons challenge the nuclear taboo.²⁹ Given these circumstances, the nuclear revolution no longer appears as revolutionary in statecraft—its ability to induce caution through nuclear weapons is under pressure as states build arsenals to gain an advantage in potential nuclear warfare and make increasingly aggressive threats to emphasize the importance of specific national interests. By moving away from the nuclear taboo, states are using nuclear weapons as another means of gaining advantage in power politics.

Finally, another change in the security environment that raises questions about stability is the internal characteristics of emerging nuclear-armed states. Narang and Sagan characterize India and Pakistan as “de facto praetorian” regimes, indicating that their militaries wield excessive or abusive influence over political decisions.³⁰ Military organizations may have goals and objectives separate from the overall state-level goal of maintaining security, potentially leading to nuclear escalation. For example, a military organization may prioritize the role of nuclear weapons in decision-making to secure more resources. North Korea exemplifies another concerning type of regime, considered a personal dictatorship. This type

²⁸ Nina Tannenwald, “How Strong Is the Nuclear Taboo Today?,” *Washington Quarterly* 41, no. 3 (September 2018), 103, <https://doi.org/>.

²⁹ Tannenwald, “How Strong Is the Nuclear Taboo Today?,” 90.

³⁰ Narang and Sagan, eds., *The Fragile Balance of Terror*, 7.

of regime may present “different kinds of threats and challenges for nuclear stability.”³¹ Leaders in personal dictatorships may have fewer organizational constraints and significant latitude to indulge in psychological issues like narcissism, paranoia, pride, and shame. Such regimes may foster poor learning environments due to the inclination of personalistic leaders to “surround themselves with sycophants, privileging loyalty or competence.”³² Personal beliefs and perceptions can exert a significant influence on decision making.³³ In an environment with few organizational restraints, uncertainty is amplified. Consequently, personal dictatorships introduce uncertainty when assessing the functioning of deterrence. For instance, a personalistic leader may escalate a conflict based on pride or shame rather than considering the potential for destruction.

In summary, the addition of more nuclear-armed states introduces uncertainties into the functioning of deterrence. States may question the existence of a stalemate or their ability to achieve mutual vulnerability, leading them to seek ways to attain military superiority. The nuclear taboo faces pressure as more states view nuclear weapons as a competitive source for gaining an advantage. The internal characteristics of emerging nuclear-armed states create greater potential for escalation than was perceived during the Cold War era.

The Truth about Nuclear Weapons in the Current Security Environment

The questions persist: To what degree did the introduction of nuclear weapons represent a revolution, if at all? To what extent does the nuclear revolution impact competition? Do the concepts of the nuclear revolution remain valid in light of potential shifts in the security environment, or is the situation evolving, and to what extent?

Extent of the Nuclear Revolution

The introduction of nuclear weapons was indeed groundbreaking, yet not as profoundly revolutionary as the term *revolution* suggests. The specter of nuclear war persisted throughout the Cold War, notwithstanding the concept of mutual vulnerability. The end of the Cold War may have come about without a catastrophic escalation by sheer chance. The Cuban missile crisis, a highly charged situation

³¹ Narang and Sagan, eds., *The Fragile Balance of Terror*, 40.

³² Narang and Sagan, eds., *The Fragile Balance of Terror*, 40.

³³ Keith B. Payne, *The Fallacies of Cold War Deterrence and a New Direction* (Lexington: The University Press of Kentucky, 2001), 40-45.

with numerous opportunities for miscalculation and misinterpretation of intentions, underscores that tension endured between nuclear-armed states, and the staleness of the standoff may not have been as robust as anticipated. This likelihood becomes even more pronounced in the present day with an increasing number of states possessing nuclear weapons. An evaluation by Patrick Morgan, an expert in deterrence theory, may retain relevance today when he stated, “deterrence theory cannot now, and will not in the future, resolve the difficulties, in the abstract and in practice, that we regularly encounter with deterrence.”³⁴

Conversely, states cannot disregard the caution that nuclear weapons instill. The fact remains that no state has employed nuclear weapons since 1945, despite numerous opportunities to do so. With more nuclear-armed states emerging and the potential for tense situations on the rise, these opportunities will likely increase.

The reality about nuclear weapons today is that they continue to be significant. Nuclear weapons both promote caution and retain value as tools for gaining advantage. The lesson for the United States is that nuclear weapons still hold importance because others employ them to seek advantages in competition. Therefore, the United States should not seek complete disarmament but rather modernize its nuclear arsenal to adapt to the evolving capabilities of adversaries.

Nuclear Revolution’s Influence on Competition

The nuclear revolution has not completely eliminated competition, but it has imposed significant constraints. Nuclear weapons constrain the conduct of warfare, even while permitting the possibility of conflict. These constraints are evident in the relationship between Russia and the United States and its allies during the invasion of Ukraine. Russia’s possession of a nuclear arsenal has facilitated the invasion of Ukraine by dissuading other states from becoming more directly involved in the conflict. Without Russia’s nuclear weapons, the United States and its allies might have intervened more directly in the conflict rather than resorting to indirect measures like sanctions and the provision of military equipment. The fear of Russia’s nuclear arsenal has restrained the escalation between major military powers. Similar restraint is also observed in the conflict between India and Pakistan. Pakistan’s nuclear arsenal is postured to deter conventional attacks but was not used in response to India’s air attacks in 2019, despite the option to employ them as a deterrent against further conventional aggression.

The fear of nuclear escalation provides states with a compelling reason to pursue peace or, at the very least, limit conflict. States pursue their interests while being

³⁴ Patrick M. Morgan, *Deterrence Now* (Cambridge: Cambridge University Press, 2003), 43.

mindful of the opposing side's interests. In this context, the desire to avoid escalation creates incentives for cooperation.

However, concluding that the nuclear revolution completely reshaped the international system away from anarchy and competition may be an overstatement. States still compete to gain advantages even under the shadow of nuclear war. The reality is that states cannot exert dominance as they could before the existence of nuclear weapons.

The United States should leverage the fear of escalation to establish safeguards through arms control agreements. Arms control should serve as a tool not only to manage the competition in nuclear modernization but also to create confidence-building measures that enhance transparency and discourage force structures that could provide a first-strike advantage, particularly in Sino-US talks.

Nuclear Revolution in Today's Security Environment

The evolving security landscape diminishes the absolute validity of the nuclear revolution, but its core arguments are not entirely invalidated. Mutual vulnerability remains a crucial restraining factor. Nuclear weapons, with their immense destructive potential, continue to promote caution, even with a limited number of weapons. However, the new security environment is growing in complexity as arsenals expand, and states learn to employ their nuclear capabilities for political advantage, both in times of peace and in potential conflicts. The specter of nuclear war persists, as does the presence of power politics and competition.

Looking ahead, decision-makers must consider the dynamics among all nuclear-armed states, not just a select few. There can be a tendency to concentrate solely on the interactions between the United States, Russia, and China, but such a narrow focus underestimates the intricate nature of international relations. The challenge lies in the fact that these three countries are not the only ones influencing nuclear arsenals. A prime example is the interplay among India, Pakistan, and China. Any changes in India's arsenal could trigger shifts in the postures of Pakistan or China. Modifications in China's posture, in turn, could impact the actions of Russia or the United States regarding their nuclear postures. What's even more concerning is the potential for misperceptions to drive alterations in nuclear postures. Even if India were to maintain its posture, a perceived change by China could produce similar consequences.

Moreover, the dynamic among all nuclear-armed states is not confined solely to these states. The actions of competitive non-nuclear-armed states could influence the dynamics of nuclear-armed states. For instance, provocative actions by Saudi Arabia or Turkey could persuade Iran that it needs nuclear weapons, which would alter the dynamics among existing nuclear-armed states. The United States might

adjust its posture in response, further affecting its relations with others. The new security environment is fraught with complexities, and it does not conform to the simplified expectations of the nuclear revolution theory.

To navigate this intricate environment, the United States should strive to mitigate uncertainties. Implementing damage limitation capabilities like active missile defense can safeguard the United States against states seeking military advantage through nuclear weapons. Active missile defense is indispensable because relying solely on deterrence through offensive weapons is insufficient. As mentioned, the pressure on the nuclear taboo is substantial, and the internal restraint in emerging states is too uncertain.

Conclusion

In conclusion, the introduction of nuclear weapons did indeed alter international relations, but perhaps not to the extent envisioned by the theory of the nuclear revolution. These weapons have instilled a level of restraint among states, reducing the likelihood of large-scale conflicts. However, the pursuit of strategic advantages persists, both in peacetime and in the potential scenarios of future conflicts. The evolving nuclear landscape presents formidable challenges as emerging nuclear states may exhibit less restraint, creating difficulties for established nuclear powers in maintaining the effectiveness of their deterrence policies. In an increasingly uncertain world, it remains imperative for states to maintain effective deterrence policies to avert catastrophic consequences.

Considering these challenges, the United States should pursue a multifaceted approach. Nuclear modernization is essential to ensure credible responses to evolving threats. Simultaneously, the pursuit of arms control agreements is crucial to manage competition and enhance transparency among nuclear-armed states. Furthermore, the adoption of damage-limiting capabilities can help reduce uncertainty in the new security environment. By combining these measures, the United States can navigate the complexities of the contemporary nuclear landscape and contribute to a more stable and secure world. 🌟

Lt Col Elijah S. Porter, USAF

Lieutenant Colonel Porter is an intercontinental ballistic missile operator in the US Air Force and currently a doctoral candidate in defense and strategic studies at Missouri State University. He holds a master's degree in management from Troy University and a bachelor's degree in international relations from Brigham Young University. His research interests include China's nuclear posture and nuclear deterrence strategy.

Disclaimer

The views and opinions expressed or implied in JIPA are those of the authors and should not be construed as carrying the official sanction of the Department of Defense, Department of the Air Force, Air Education and Training Command, Air University, or other agencies or departments of the US government or their international equivalents.