Modern Warfare and the Nuclear Shadow

A Comparative Study of the Nuclear Shield in the Russo-Ukrainian War and a Taiwan Contingency

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Chapter 4

War with New and Old Characteristics

Models of Chinese People's Liberation Army missile launchers on display at the Military Museum of the Chinese People's Revolution (photo taken by the author)

What is the role of nuclear weapons in the Russo-Ukrainian War? What insights can be drawn from the conflict, particularly for a Taiwan contingency? In the post-Cold War world of U.S. unipolarity, nuclear weapons faded into the background of global politics, heralding an era of "nuclear forgetting."[1] Yet, even now, Russia remains a nuclear power on par with the United States. Russia's brazen military invasion of its neighbor, coupled with repeated and explicit references to nuclear forces in this process, are putting nuclear weapons back onto the front stage. Meanwhile, in East Asia, where China rises as a challenger to the existing international order, there are growing concerns over Beijing's large-scale buildup and modernization of not only conventional forces but also nuclear forces. Furthermore, the United States has signaled its ongoing commitment to upgrading its nuclear weapons systems. As the international political landscape shifts away from the "post-Cold War" world, bringing an end to U.S. unipolarity and "nuclear forgetting," the significance of nuclear weapons is worthy of a reexamination.

First, this chapter shows that, while the Russo-Ukrainian War is fought with conventional forces, Russia's nuclear threats have functioned mainly as a "shield" against direct intervention by the United States and the North Atlantic Treaty Organization (NATO).[2] This is an outcome of the stability-instability paradox. Namely, Russia leverages stability at the strategic level provided by nuclear deterrence to reduce external risks, allowing it to pursue localized aggression through conventional forces. However, the nuclear shield against external intervention is not uniformly effective; some key variables influence its effectiveness. This chapter focuses particularly on three variables related to capabilities: (1) the balance of nuclear forces, (2) the balance of conventional forces, and (3) the sustainability of indirect assistance. In the case of the Russo-Ukrainian War, Russia possesses nuclear forces that are at least equal to, if not superior in certain respects to, those of the United States. In addition, the conventional force disparities between Russia and Ukraine were less than anticipated, and conditions were in place that allow for continued military support for Ukraine. These factors gave

1) *"Kaku no bokyaku" no owari: Kakuheiki fukken no jidai* [The end of nuclear forgetting: Revival of nuclear weapons], ed. Akiyama Nobumasa and Takahashi Sugio (Keiso Shobo, 2019).

2) In this chapter, "direct intervention" refers to the combat deployment of forces directly commanded by an external actor, while "indirect assistance" refers to assistance that does not involve such personnel commitments.

the United States and NATO relatively little incentive to engage in direct military intervention, and the Russian military was able to pursue a one-on-one localized conventional war against Ukrainian forces.

I will then use the three-variable framework to analyze a Taiwan contingency. In a scenario where China resorts to the use of force to seize control of Taiwan's main island, the values for one or more of the three variables are expected to be significantly different from those in the Ukrainian scenario, though the results will depend on what future point in time is assumed. China is rapidly building up and modernizing nuclear forces, but it has not reached parity with the United States. While Taiwan is developing conventional forces to acquire asymmetric denial capabilities, it is doubtful that Taiwan will be able to resist the Chinese People's Liberation Army (PLA) on its own indefinitely. Furthermore, although Taiwan's insular geography offers defensive benefits, China is likely to impose a blockade of some kind in the event of a contingency. This will make it difficult for external actors to provide stable, indirect assistance to Taiwan without accepting the risk of clashing with the PLA. Comparatively, these factors might make the U.S. incentive for direct intervention stronger for a Taiwan contingency than for the Russo-Ukrainian War. Contrary to the consistent U.S. posture of non-intervention in Ukraine, a Taiwan contingency would compel a decision on intervening or not with greater urgency. That would create a more unpredictable and higher risk situation from China's perspective, making its nuclear shield relatively ineffective.

The Nuclear Shadow in the Russo-Ukrainian War

This section explores the role played by nuclear weapons in the Russo-Ukrainian War. Although only conventional forces have been employed in the war as of writing, it must be kept in mind that this conflict has been fought under the nuclear shadow. The bottom line is that the most important role of Russia's nuclear threats has been to deter the United States and NATO from directly intervening in the conventional war in Ukraine. By repeating active nuclear threats and demonstrating nuclear force readiness, Russia has sought to ensure stable nuclear deterrence to effect a localized conventional aggression. This section provides an overview of the role of nuclear weapons

in the Russo-Ukrainian War, before delving into a theoretical discussion of the underlying stability-instability paradox in the next section.

Russia's Nuclear Threats

According to experts on Russian nuclear doctrine, nuclear weapons have been given a relatively active role in post-Cold War Russia, representing a clear departure from the Soviet era when No First Use (NFU) was officially advocated at least in declaratory policy.[3] The 2014 version of Russia's "Military Doctrine" states that the use of nuclear weapons would be considered not only in cases where Russia and/or its allies are attacked with nuclear weapons (or other weapons of mass destruction), but also in cases where the existence of the state is threatened by strikes with conventional forces. The 2020 version further expands the scenarios for considering nuclear use, clarifying that they would include an "arrival of reliable data on a launch of ballistic missiles attacking the territory of the Russian Federation and/or its allies" and "attack by [an] adversary against critical governmental or military sites of the Russian Federation, disruption of which would undermine nuclear forces response actions."[4] The latest doctrine, unveiled in November 2024, slightly lowers the threshold from the previous "existence of the state," stipulating that nuclear use would be considered if a strike by conventional forces "creates a critical threat to their sovereignty and (or) territorial integrity."[5] Taking into account that Ukraine attacked Russian territory with missiles supplied by the United States and other countries, Russia announced that strikes carried out by a non-nuclear-armed state with

3) Koizumi Yu, "Roshia: Roshiaban 'esukareshon yokushi' senryaku wo megutte" [Russia: The Russian version of "de-escalation" strategy], in *"Kaku no bokyaku" no owari*, ed. Akiyama and Takahashi, 45–72; "Foundations of State Policy of the Russian Federation in the Area of Nuclear Deterrence (informal translation by the CNA Russia Studies Program)," Center for Naval Analysis (June 2020); Michael Kofman, Anya Fink, and Jeffrey Edmonds, "Russian Strategy for Escalation Management: Evolution of Key Concepts," Center for Naval Analysis (2020). In contrast, some scholars emphasize the continuity of traditional deterrence concepts in Russia's nuclear strategy. Olga Oliker, "Moscow's Nuclear Enigma: What Is Russia's Arsenal Really For?," *Foreign Affairs* 97, no. 6 (2018): 52–58.

4) Shannon Bugos, "Russia Releases Nuclear Deterrence Policy," *Arms Control Today* (July/August 2020).

5) Guy Faulconbridge and Anton Kolodyazhnyy, "Putin Issues Warning to United States with New Nuclear Doctrine," Reuters, November 20, 2024.

the support of a nuclear-armed state would be regarded as a joint strike by both.

Russia's conventional forces are inferior to those of NATO, in a reversal from the Soviet period when it maintained numerical superiority. It is therefore only natural that Moscow would attempt to compensate by emphasizing nuclear forces to ensure deterrence. Indeed, during the Cold War, the same logic led the United States to forward-deploy tactical nuclear weapons to make up for its shortfalls in conventional forces. Whether Russia actually possesses a nuclear war-fighting doctrine remains a matter of debate. What is clear is that Russia is prepared to employ nuclear signaling very aggressively.

In fact, Russia repeatedly threatened nuclear use before and after the invasion of Ukraine. Just before the invasion, in mid-February 2022, Russian nuclear forces conducted large-scale exercises as President Vladimir Vladimirovich Putin looked on from the situation center in the Kremlin.[6] On the day of the invasion, President Putin also warned that if other countries interfered in Ukraine, they would face consequences "you have never seen in history." Several days later, he placed Russian nuclear forces on high alert.[7] Specifically, he suggested that if the West aggravated the situation, such as by sending their own forces or allowing strikes on Russian territory using Western-made weapons, the "balance of strategic weapons" between the United States and Russia would erode and the situation could evolve into a global nuclear war.[8] President Putin further asserted that it was a mistake for Western countries to believe that Russia would not use nuclear weapons, stating, "We have a nuclear doctrine… If someone's actions threaten our sovereignty and territorial integrity, we consider it possible for us to use all means at our disposal."[9] In line with these statements, Russia conducted exercises simulating tactical nuclear launches in the Southern

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6) Tom Balmforth and Maria Kiselyova, "Putin Leads Sweeping Nuclear Exercises as Tensions Soar," Reuters, February 19, 2022.

7) "Russia Attacks Ukraine as Putin Warns Countries Who Interfere Will Face 'Consequences You Have Never Seen,'" PBS, February 24, 2022; "Russia's Putin Puts Nuclear Forces on High Alert," Reuters, February 27, 2022.

8) "Puchin Ro daitoryo, kakuheiki shiyo fukumu 'sekaiteki funso' wo keikoku" [President Putin of Russia warns of "global conflict" including nuclear use], *Sankei Shimbun*, May 29, 2024.

9) "Putin Says Russia Could Use Nuclear Weapons If Its Sovereignty or Territory Was Under Threat," Reuters, June 6, 2024.

Military District, adjacent to Ukraine.[10] Russia also held joint exercises with Belarus to demonstrate the readiness of Russian tactical nuclear weapons deployed there.[11] Such highly explicit, sustained nuclear signaling alongside conventional military operations can be considered one of the key characteristics of the Russo-Ukrainian War.

In August 2024, Ukraine launched a cross-border incursion on Kursk Oblast in western Russia, which technically violated Russia's "territorial integrity." Ukraine actively deployed Western-supplied armored vehicles and conducted operations in Russian territory. On the surface, the situation appeared to be exactly what President Putin had warned about. However, its strategic impact was limited. Ukraine never possessed the operational capabilities to fundamentally threaten Russia's strategic depth. Furthermore, as implied by President Volodymyr Zelenskyy's stated objective to create a buffer zone between Ukraine and Russia, the operations were localized and confined to areas in Kursk Oblast adjacent to Ukraine. Although Russia made new moves, such as deploying North Korean troops and using the new Oreshnik intermediate-range ballistic missile mounted with multiple warheads, the situation was still far from threatening Russia's survival. As of writing, Russia's activities do not hint at dramatic vertical escalation. Moscow has already exhausted nearly all of its available military options except for nuclear use.

The Role of Russia's Nuclear Threats

Importantly, while Russia's overall strategic objective is to actively change the status quo, President Putin's repeated nuclear threats have played more of a deterrence role than a compellence role. Generally speaking, deterrence is to dissuade an adversary from taking a certain action, whereas compellence is to force an adversary to take a specific action.[12] As one of his case studies of nuclear compellence, Ohnishi Ken studied the Russo-Ukrainian War,

10) Mark Trevelyan, "Russia Starts Exercise to Simulate Launch of Tactical Nuclear Weapons," Reuters, May 22, 2024.
11) Guy Faulconbridge, "Russia Begins Second Stage of Tactical Nuclear Weapon Drills with Belarus," Reuters, June 12, 2024.
12) Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966).

in which he also correctly points out the aspects of deterrence.[13] When Russia used nuclear threats for compellence, its primary objective was to halt Western military support for Ukraine. However, threatening nuclear strikes to stop the flow of logistical support for Ukraine would be incredible because the means outweigh the ends far too much. Even considering the potential use of tactical nuclear weapons against military targets in Ukraine, it is questionable if there is any target that requires a nuclear strike. As Russia claims an ethnic unity with Ukraine to justify the war, it would be also politically self-defeating for Moscow to carry out a nuclear strike against Ukraine. Indeed, Russia's nuclear blackmail has proven to be ineffective for compellence in the course of the war. Ohnishi concludes that the situation has not been sufficiently urgent for the United States and NATO to believe Russia would actually resort to nuclear use.

Rather, the core significance of Russia's nuclear threats lies in deterring direct U.S. and NATO intervention while the conventional war is waged in Ukraine. Russia's initial objectives, including the capture of Kyiv, have ended in failure. Meanwhile, Ukraine's counter offensives to regain lost territory have also stalled. With the conflict already devolving into a war of attrition, it is hard to imagine the decisive defeat of Russia, given its superior material resources. Russia has already made some tangible gains by establishing a de facto buffer zone in eastern Ukraine, where the war has come to a stalemate. Thus, it is unlikely that Russia will suffer a devastating defeat such as to meet the stated precondition for nuclear use.[14] If Russia's nuclear use were to become more genuinely credible, it would be a situation where the United States and NATO deployed air and ground forces, thereby dramatically tipping the scales against Russia. As I will argue, that scenario is also unlikely.

When asked about the possibility of using nuclear weapons, Russian Ambassador to the United States Anatoly Antonov denied it, stating that Russia was merely exercising "classic deterrence in extreme geopolitical

13) Ohnishi Ken, "Compellence and Nuclear Weapons: A Study of Conditions for the Success of Proactive Nuclear Threats," in *New Horizons of the Nuclear Age*, English edition, ed. Ichimasa Sukeyuki (Tokyo: NIDS, 2024), 73–135.

14) Guy Faulconbridge and Felix Light, "Putin Ally Warns NATO of Nuclear War If Russia Is Defeated in Ukraine," Reuters, January 19, 2023.

circumstances."[15] In other words, Russia has the capacity to continue fighting with conventional forces as long as the Russo-Ukrainian War remains a localized conflict, but it relies on nuclear deterrence to avoid the ultimate risk of direct clashes with NATO.

The Impact of Russia's Nuclear Threats

Indeed, there is some evidence that the United States and other NATO countries gravitated toward a cautious approach in the face of Russian nuclear threats. Soon after the invasion, in March 2022, President Joseph R. Biden Jr. outlined the basic policy on the Russo-Ukrainian War. In the statement, President Biden plainly denied the possibility of direct intervention, stating that "Direct conflict between NATO and Russia is World War III, something we must strive to prevent." He also rejected the idea of establishing a no-fly zone over Ukraine, which was advocated by some members of Congress, noting the risk of direct exchange of fire with Russian aircraft.[16] Even while strongly condemning President Putin, President Biden took extra care to avoid creating misperceptions about his intent, clarifying that the United States did not have a policy of regime change in Russia.[17] In November, despite a missile landing in Polish territory that killed two civilians, the U.S. and Polish governments displayed remarkable calm, announcing that the explosion had been caused by an air defense missile fired by the Ukrainian side.[18] In February 2024, President Emmanuel Macron of France remarked that sending ground troops would not be ruled out. However, it was probably nothing more than rhetorical messaging aimed at inducing caution from Russia. As evidenced by the immediate denials of other NATO countries, no concrete steps were taken that would lead to direct intervention.[19]

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15) Tom O'Connor, "Russia Ambassador Says Putin Nuclear Deterrence 'Works': Biden Would Do Same," Newsweek, December 8, 2022.
16) Brett Samuels, "Biden: Direct Conflict between NATO and Russia Would Be 'World War III,'" *Hill*, March 11, 2022.
17) Phil Stewart, Brendan O'Brien, and Humeyra Pamuk, "Biden Says He Is Not Calling for Regime Change in Russia," Reuters, March 28, 2022.
18) "Poland Blast Caused by Missile Fired by Ukrainian Forces at Incoming Russian Missile," Reuters, November 16, 2022.
19) Lipika Pelham and Lou Newton, "NATO Allies Reject Emmanuel Macron Idea of Troops to Ukraine," BBC, February 28, 2024.

Moreover, while the Biden administration provided enormous aid packages for Ukraine, it was reluctant to supply main battle tanks, combat aircraft, and other heavy equipment. When the United States provided the relatively long-range High Mobility Artillery Rocket Systems (HIMARS), Washington prohibited their use in attacks on Russian territory. Such restrictions stemmed from deep concerns over conflict escalation.[20] Although the supply and uses of such weapons were gradually relaxed, the Biden administration's cautiousness and incrementalism characterized the whole process. Purely from the standpoint of improving Ukraine's force posture, the United States might have delivered equipment and supplies more quickly and in larger quantities. Instead, Washington gradually stepped up support, weighing escalation risks heavily in addition to the limits of equipment/supply stockpiles and defense industry capacity.

A clear majority of the U.S. public opposes direct intervention in the Russo-Ukrainian War, a trend which has remained largely unchanged since the invasion began. According to a survey conducted by the Associated Press-NORC Center for Public Affairs Research, as of mid-April 2022, no more than 22% of Americans responded that the United States should send troops to Ukraine to fight Russian forces.[21] In another survey conducted approximately two years later in February 2024, the percentage who responded that the United States should play a more active role in the Russo-Ukrainian War remained at 22%. As may be inferred, the American people have been consistently reluctant to escalate involvement beyond indirect support.[22] However, as the surveys did not include detailed questions, the reason cannot necessarily be attributed to nuclear escalation concerns. Nonetheless, it should be reasonable to expect that growing skepticism among American citizens over traditional U.S. internationalism is going to cast a long shadow on Washington's response to foreign crises.[23]

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20) Hal Brands, "Why Won't Biden Let Ukraine Hit Russia Back with US Weapons?," Bloomberg, May 17, 2024.

21) AP-NORC Center for Public Affairs Research, "Most Americans Oppose Sending Troops to Ukraine," April 22, 2022.

22) Farnoush Amiri and Linley Sanders, "Few Americans Want US More Involved in Current Wars in Ukraine and Gaza, AP-NORC Poll Finds," Associated Press, March 7, 2024.

23) Charles A. Kupchan, *Isolationism: A History of America's Efforts to Shield Itself from the World* (Oxford: Oxford University Press, 2020).

Three years have passed since the full-scale invasion of Ukraine began. Regardless of Russia's unimpressive combat performance on the ground, the circumstantial evidence suggests Russian nuclear forces have served their deterrent purposes in dissuading the United States and NATO from direct intervention.

However, it should be noted that any analysis of an ongoing war is provisional at best, and that it is difficult to establish causal claims on deterrence. Notably, as the United States ruled out direct intervention early on in the war, some critics might argue that Washington did not see any vital interest in Ukraine to begin with. However, the languages used in that decision, including about avoiding "World War III," suggest Russian nuclear weapons had tangible deterrent effects, and help explain fundamentally why the United States takes all the steps to avoid a direct clash with Russia. In any case, national decision-making on the use of force is always shaped by multiple factors. Until internal documents related to Western decision-making processes are disclosed, we cannot assess the real impact of Russia's nuclear threats with any measure of empirical certainty. Therefore, the analysis of the Russo-Ukrainian War presented in this chapter should be taken as preliminary. The next section explains the stability-instability paradox as the theoretical foundation of my analysis and discusses the variables that influence the effectiveness of the nuclear shield.

The Stability-Instability Paradox and the Effectiveness of the Nuclear Shield

The Russo-Ukrainian War and a Taiwan contingency have critical differences, as discussed later in this chapter, but they also have important similarities. First, the two scenarios have a parallel structure. A nuclear-armed state (Russia/China) seeks to change the status quo by using conventional forces against a small country or region located in its periphery (Ukraine/Taiwan). On the other side of the fault line, the United States and its regional partners have status quo preferences and need to manage their level of engagement. A particularly important point is that, although the United States has certain interests in maintaining the status quo of Ukraine and Taiwan, it does not have a formal alliance with or an extended nuclear deterrence commitment to either. Moreover, there are no "tripwires" or forward deployments that

would semi-automatically draw U.S. forces into a conflict in the event of an invasion. As a result, the manner of U.S. engagement is largely left to the discretion of the President at the time. In other words, much uncertainty surrounds the U.S. response, which requires the revisionist state to make careful risk calculations as well.

For a revisionist state, nuclear weapons can serve as a critically important asset for managing this risk. As the previous section showed, Russia pursues localized aggression using conventional forces while ensuring strategic-level deterrence with its vast nuclear arsenal. This strategy exploits the classic stability-instability paradox. There are already some writings of the Russo-Ukrainian War that take this view.[24] The U.S. 2022 Nuclear Posture Review (NPR) notes, "Russia's leaders have made clear that they view these [nuclear] weapons as a shield behind which to wage unjustified aggression against their neighbors."[25]

Although the stability-instability paradox is often cited to explain revisionist actions of nuclear-armed states, there remains the crucial question of *under what conditions* the nuclear shield becomes more or less effective. Therefore, this chapter outlines the basic arguments of the paradox and then discusses the variables that influence the effectiveness of the nuclear shield.

The Stability-Instability Paradox

The stability-instability paradox is the theoretical hypothesis that the more stable nuclear deterrence is at the strategic level, the more likely lower-level armed conflicts become. Glenn Snyder, who formulated the concept, examined the interaction between the "balance of terror" at the strategic nuclear level and the "balance of power" at the theater level. He suggested that, as the "balance of terror" became more stable, there would be less

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24) Andrew Kydd, "Will NATO Fight Russia over Ukraine? The Stability-Instability Paradox Says No," Political Violence at a Glance (blog), March 24, 2022; Jeffrey Lewis and Aaron Stein, "Who Is Deterring Whom? The Place of Nuclear Weapons in Modern War," *War on the Rocks*, June 16, 2022; David A. Cooper, "Has the Forgotten 'Stability-Instability Paradox' Belatedly Reared Its Ugly Head in Ukraine?," *Orbis* 67, no. 1 (January 1, 2023): 103–113; Francis J. Gavin, "Nuclear Lessons and Dilemmas from the War in Ukraine," in *War in Ukraine: Conflict, Strategy, and the Return of a Fractured World*, ed. Hal Brands (Baltimore, MD: Johns Hopkins University Press, 2024), 173–186.

25) U.S. Department of Defense, "2022 Nuclear Posture Review," October 2022.

inhibitions in the "balance of power" realm.[26] "[I]f neither side has a 'full first-strike capability,' and both know it, they will be less inhibited about initiating conventional war, and about the limited use of nuclear weapons, than if the strategic balance were unstable."[27] If both have invulnerable second-strike capability, escalation to nuclear war would be tantamount to suicide. Therefore, nuclear retaliation would not be credible as an immediate response to conventional aggression. As a result, nuclear weapons would be cancelled out through mutual deterrence, once again opening up the possibilities of using conventional forces to alter the status quo.[28]

This paradox becomes particularly acute in the context of extended deterrence where the credibility of commitments is often called into question. Originally, the concept evolved during the Cold War, when there were heightened concerns about the extended deterrence posture against the Soviet Union, which boasted superior conventional forces in Europe, as well as proxy wars that emerged in other regions. If a revisionist state believes that a nuclear-armed security guarantor would not risk a nuclear war to protect a third country (as epitomized by the question, "Is the United States prepared to sacrifice Los Angeles for Berlin?"), then the risk of a deterrence breakdown increases. There are empirical research findings that even if a nuclear first strike is launched against an ally, the American public would be reluctant to support U.S. nuclear retaliation.[29] After the Cold War ended and the proliferation of nuclear weapons ushered in the "second nuclear age," the paradox was reexamined by applying new cases, such as India and Pakistan. Akiyama Nobumasa and Takahashi Sugio contend that the stability-instability paradox remains an important concept today for analyzing the security environments in Europe and East Asia, where the United States maintains the nuclear umbrella.[30]

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26) Glenn Snyder, "The Balance of Power and the Balance of Terror," in *The Balance of Power*, ed. Paul Seabury (San Fransisco, CA: Chandler, 1965).

27) Ibid., 198–199.

28) Christopher J. Watterson, "Competing Interpretations of the Stability-Instability Paradox: The Case of the Kargil War," *The Nonproliferation Review* 24, nos. 1-2 (January 2, 2017): 83–99.

29) David M. Allison, Stephen Herzog, and Jiyoung Ko, "Under the Umbrella: Nuclear Crises, Extended Deterrence, and Public Opinion," *Journal of Conflict Resolution* 66, no. 10 (November 1, 2022): 1766–1796.

30) Akiyama and Takahashi, eds., *"Kaku no bokyaku" no owari*.

What the post-Cold War studies have shown is that it is inadequate to consider only the two levels in the basic form of the stability-instability paradox: "stability at the strategic nuclear level" and "instability at the sub-nuclear level."[31] Although Snyder identified tactical nuclear weapons as a "bridge" between the two levels, later cases such as the India-Pakistan conflicts reinforced the analytical need for more fine-grained analysis. The reason is that the "sub-nuclear level" covers a wide variety of conflicts, ranging from large-scale conventional wars that could directly determine the fate of a state, to conflicts at relatively lower levels of violence, such as border skirmishes and attacks carried out by non-state actors. At these different levels of violence, the risk of nuclear escalation varies in degree. For example, Pakistan is said to have used its tactical nuclear weapons to manipulate risk, deterring India from using its superior conventional forces to carry out a large-scale retaliation, while seeking to change the status quo through low-intensity means.[32]

According to Robert Powell, greater instability, defined as a sharper trade-off between the scale of the conventional forces deployed and the risk of nuclear escalation, does not uniformly inhibit all levels of sub-nuclear conflict. Instead, it reduces the likelihood of conventional wars at higher levels of violence while increasing the likelihood of conflicts at lower levels of violence.[33] The Russo-Ukrainian War is the largest armed conflict in Europe since World War II. However, the conflict in Ukraine has not reached a stage where the very survival of a nuclear-armed state is threatened and a desperate use of nuclear weapons becomes plausible. While the United States and Russia share a common interest in avoiding a direct military clash, a localized proxy war has broken out. This instability at the lower levels of the escalation ladder reflects the higher credibility of Russian nuclear escalation in case of an expanded conflict directly involving the United States.

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31) Kurita Masahiro, "Revisiting Strategic Stability: Focusing on Interactions between the Nuclear and Sub-nuclear Levels of Conflict," in *New Horizons of the Nuclear Age*, English edition, ed. Ichimasa, 19–55.

32) S. Paul Kapur, *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia* (Stanford, CA: Stanford University Press, 2007). See also S. Paul Kapur, "India and Pakistan's Unstable Peace: Why Nuclear South Asia Is Not Like Cold War Europe," *International Security* 30, no. 2 (2005): 127–152.

33) Robert Powell, "Nuclear Brinkmanship, Limited War, and Military Power," *International Organization* 69, no. 3 (2015): 589–626.

To be clear, stability of strategic nuclear deterrence posited in the stability-instability paradox does not necessarily mean that no nuclear threats are issued. At its core, strategic stability means the absence of first-strike incentives. As long as mutually invulnerable second-strike capabilities are in place, the fundamental incentive structure that underpins strategic stability would not be drastically changed by overt nuclear threats involving public statements or exercises. Such overt threats are more a demonstration of one's force readiness or a reminder of nuclear deterrence than a sign of instability. In other words, they are part of stable nuclear deterrence practices.

In addition, actively threatening nuclear use serves the purpose of heightening the adversary (in this case, American) perception of continuity at the higher levels of the escalation ladder—namely, the perception that a large-scale conventional war triggered by external intervention could readily escalate into nuclear war. Particularly for states like Russia, whose conventional capabilities are already strained, inviting a large-scale external intervention even at the conventional level would constitute a strategic failure. The key to deterring such an intervention is to put up a clear linkage between the level of large-scale conventional warfare and the level of nuclear war, so as to leverage the stable deterrent effects of nuclear weapons. Russia's repeated nuclear force exercises appear to be attempts to project an image of escalation instability by way of suggesting that direct U.S.-NATO intervention would prompt a large-scale conventional war and then inevitably lead to nuclear escalation. To make this linkage, tactical nuclear weapons play a vital role as the "bridge" (in Snyder's words) between conventional and nuclear forces.[34] The next section will have more discussion on the role of tactical nuclear weapons in shaping the effectiveness of the nuclear shield.

That being said, we should be careful not to overstate the causal role of the stability-instability paradox in conflict initiation. As Snyder talked of inhibition against the use of force, the causal effect of the stability-instability paradox discussed in this chapter is only facilitative. That is, stable deterrence at the strategic level decreases the conflict-inhibiting effects of nuclear weapons and lowers the threshold for the use of force at the lower level of violence. The paradox is just one of the factors that create potential

34) Glenn Snyder, "The Balance of Power and the Balance of Terror."

opportunities for the use of force. It tells us nothing about states' motives that push them toward revisionism in the first place, such as why Russia sees Ukraine as a vital interest.

For example, Watanabe Masayuki studies the 2014 crisis in Crimea and argues that the conflict was not caused by the stability-instability paradox because Russia's fundamental motive was to prevent Ukraine from moving out of its sphere of influence and getting closer to the EU.[35] While it is a valid argument that Russia's motive was to prevent Ukraine from moving closer to Europe, it does not follow that the stability-instability paradox was not at play. His conclusion stems from a fundamental misunderstanding of the effects of the paradox. Interestingly, Watanabe acknowledges that the stability-instability paradox was at work in the 1999 Kargil War, on the grounds that Pakistan was less inhibited about initiating conventional war. In short, he is using inconsistent criteria for determining whether the paradox is or is not at work.[36] If we correctly understand the paradox's effect is to weaken the deterrent effects of nuclear weapons, rather than dictating what states fight for, then it becomes much easier to make a case that the paradox is also at work in the Russo-Ukrainian War.

Furthermore, the paradox predicts destabilization at sub-nuclear levels when strategic nuclear deterrence is stable, relative to when strategic nuclear deterrence is unstable—not relative to when there are no nuclear weapons at all. Therefore, arguments claiming, for example, that the India-Pakistan conflict predates the existence of nuclear weapons and could not have been triggered by the stability-instability paradox, are correct on the surface but miss the real point. The stability-instability paradox implies merely that opportunities may arise for using conventional forces to change the status quo, despite the presence of nuclear retaliatory capabilities. The paradox does not define the interests that states seek to pursue through the use of force.

The purpose of this chapter is to shed light on the impact of nuclear weapons in modern conflicts, not to identify the set of causes of the Russo-Ukrainian War or to predict the likelihood of a Taiwan contingency.

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35) Watanabe Masayuki, "Reisenki senryaku riron tekiyo no kanosei: Antei-fuantei no paradokkusu to esukareshon dominansu" [The possibility of applying the Cold War-era strategic theory: Stability-instability paradox and escalation dominance], *Japan Maritime Self-Defense Force Command and Staff College Review* 12, no. 2 (November 2022): 5–24, 20.

36) Ibid., 13.

Individual cases of conflict initiation cannot be fully explained merely by determining whether the nuclear shield creates opportunities for the use of force, without understanding the interests and motivations that drive state decision-making. In this sense, it should be noted that this chapter's analysis of the stability-instability paradox and the effectiveness of the nuclear shield explains only a part (albeit an important one) of the causes of war.

The Effectiveness of the Nuclear Shield

If the stability-instability paradox creates windows of opportunity for pursuing revisionist ambitions while reducing the risk of external intervention, then what are the conditions that determine the effectiveness of the nuclear shield?

In general, there are three requirements for deterrence to work: (1) the capability to carry out the threat, (2) the political resolve to carry out the threat, and (3) credible signaling of one's capability and resolve to the adversary. A further breakdown of these categories reveals that a range of variables can influence the success or failure of deterrence. In the context of nuclear deterrence, the degree of resolve is often emphasized. As there is little doubt about the immense destructive power of nuclear weapons and their rapid delivery vehicles, some theorists claim the real challenge is to convey one's resolve, or how much risk one can tolerate in crisis bargaining.[37] In the classic game of chicken, demonstrating a higher risk tolerance is more important than marginal differences in capability. During the Cold War, for example, the United States forward-deployed tactical nuclear weapons not merely to supplement conventional forces and rectify the balance of capabilities. More importantly, it was a measure to enhance the credibility of the U.S. commitment to actually use nuclear weapons in the event of a Soviet invasion.[38]

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37) Robert Jervis, "Why Nuclear Superiority Doesn't Matter," *Political Science Quarterly* 94, no. 4 (1979): 617–633; Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca, NY: Cornell University Press, 1989).

38) Lawrence Freedman, *The Evolution of Nuclear Strategy* (London: Macmillan, 1981); Lawrence Freedman, "The First Two Generations of Nuclear Strategists," *Makers of Modern Strategy from Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986); Francis J. Gavin, *Nuclear Statecraft: History and Strategy in America's Atomic Age* (Ithaca, NY: Cornell University Press, 2012).

However, in this chapter's attempt to apply the insights from the Russo-Ukrainian War to a Taiwan contingency, the issue of resolve presents a tricky comparison, because it is largely a function of the magnitude of the stakes and of risk tolerance. That is, Ukraine's value for Russia and Taiwan's value for China cannot be directly compared. This task becomes even more complex when they are compared with the value the United States assigns to Ukraine and Taiwan, respectively. Moreover, just as Russia abruptly launched the full-scale invasion after years of relatively low-intensity hybrid warfare, the political will to use force can change quickly. Therefore, an analysis based on capabilities, which require a relatively long lead time to build up, is more appropriate for a study with future contingencies in mind.

For these reasons, this chapter focuses primarily on three key variables related to capabilities: (1) the balance of nuclear forces, (2) the balance of conventional forces, and (3) the sustainability of indirect assistance. An external actor considering intervention against a nuclear-armed state's attempt to change the status quo may respond at any level of the escalation ladder. The above variables are intended to cover the three levels of nuclear war, large-scale conventional war, and localized proxy war. At the same time, since the balance of resolve is also fundamental to the bargaining dynamics involving nuclear threats, it will be discussed where necessary. After all, this chapter's analysis assumes that the United States has *some* interest in considering direct intervention in Ukraine or Taiwan. One might wonder if the United States would have given more serious consideration to direct intervention in Ukraine if Russia had not possessed nuclear weapons. It is of course impossible to give a definite answer to that counterfactual question. However, it would be equally mistaken to assume that the United States would never carry out a military intervention in strategically vital regions like Europe and East Asia.

(1) The Balance of Nuclear Forces

The first variable is the balance of nuclear forces. For a revisionist state to enhance the credibility of its nuclear threat against U.S. direct intervention, it is, in theory, advantageous to possess superior nuclear forces. They include not only strategic nuclear weapons, which, if used, would likely result in a catastrophic nuclear war, but also theater- and tactical-level nuclear forces,

which are potentially more "usable" as a signaling device.[39] Some contend that the stability-instability paradox has surfaced at this particular juncture due to the imbalance in non-strategic nuclear forces in clear contrast to the Cold War era.[40]

Strategic nuclear weapons can be expected to deter an adversary's use of strategic nuclear weapons. On the other hand, a threat to use strategic nuclear weapons as an immediate response to U.S. military intervention would lack credibility because it would be suicidal against the vast and invulnerable U.S. strategic nuclear arsenal. Due in part to institutional frameworks such as the New START Treaty, the United States and Russia still maintain parity in strategic nuclear forces that results in mutual deterrence. As already noted, the essence of the aggressive use of the nuclear shield lies in extending this stable deterrence to the level of large-scale conventional war.

Here, a key role is played by tactical nuclear weapons that Snyder described as the "bridge" between conventional and nuclear forces. Tactical nuclear weapons are important as limited-use options that allow for graduated escalation, without immediately triggering full-scale nuclear war. Because they pose a relatively credible threat as the first step to cross the nuclear threshold, they provide a more potent deterrent against the use of large-scale conventional forces.[41] Of course, even tactical nuclear weapons carry significant risks: once the nuclear threshold is crossed, there is no sure way to re-establish escalation control before the situation devolves into wholesale nuclear exchange. To exploit this risk to one's advantage, however, tactical nuclear weapons can be used to manipulate the adversary's risk calculus through forward deployment, delegated launch authority, or other mechanisms. In other words, tactical nuclear weapons can be a powerful signaling device to evoke a "threat that leaves something to chance."[42] Thus,

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39) There are some statistical findings that corroborate the stability-instability paradox. For example, Early and Asal report that nuclear-armed states tend to take bolder actions when they possess strategic nuclear capabilities that can threaten the survival of adversaries. Bryan R. Early and Victor Asal, "Nuclear Weapons, Existential Threats, and the Stability-Instability Paradox," *The Nonproliferation Review* 25, nos. 3-4 (May 4, 2018): 223–247.

40) Cooper, "Has the Forgotten 'Stability-Instability Paradox' Belatedly Reared Its Ugly Head in Ukraine?"

41) Robert Powell, *Nuclear Deterrence Theory: The Search for Credibility* (Cambridge: Cambridge University Press, 1990).

42) Thomas C. Schelling, *The Strategy of Conflict* (Cambridge, MA: Harvard University Press, 1960).

possessing limited nuclear options provides greater credibility in deterring foreign intervention in a localized conventional war.

Indeed, Russia possesses non-strategic nuclear weapons with varying ranges and yields, in addition to the strategic nuclear triad. As assessed in the 2022 NPR, Russia "is unique in the combination of strategic and non-strategic nuclear forces it fields that enables nuclear employment ranging from large-scale attacks on the [U.S.] homeland to limited strikes in support of a regional military campaign [in the Euro-Atlantic region]."[43] Russia is estimated to possess around 1,000 to 2,000 nuclear warheads deployable on dual-capable platforms, and it positions these weapons as "an offset to U.S. and NATO conventional superiority."[44] Russia's platforms capable of delivering tactical nuclear weapons boast a diverse portfolio: the Army's Iskander short-range ballistic missiles (SRBMs) and 9M729 ground-launched cruise missiles (GLCMs); the Air Force's Su-34 fighter-bombers and Su-57 combat aircraft; and the Navy's land-attack sea-launched cruise missiles (SLCMs), anti-submarine missiles, depth bombs, and torpedoes.[45] Furthermore, some of these weapons, such as the Iskander, have been forward-deployed in Belarus as part of the Russian nuclear sharing arrangement.[46]

On the contrary, the United States has significantly reduced the inventory of tactical nuclear weapons deployed in Europe, leaving only B61 bombs. That means Russia enjoys superiority in this particular segment of the escalation ladder.[47] The fact that Russia possesses nuclear forces that are not only comparable to but partially superior to those of the United States undoubtedly adds some weight to its nuclear threats.

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43) U.S. Department of Defense, "2022 Nuclear Posture Review," 11.

44) U.S. Department of State, "Report to the Senate on the Status of Tactical (Nonstrategic) Nuclear Weapons Negotiations Pursuant to Subparagraph (a)(12)(B) of the Senate Resolution of Advice and Consent to Ratification of the New START Treaty," April 2023; Congressional Research Service, "Russia's Nuclear Weapons" (August 6, 2024).

45) Stockholm International Peace Research Institute (SIPRI), *SIPRI Yearbook 2024, Armaments, Disarmament and International Security* (Oxford: Oxford University Press, 2024).

46) Ibid.

47) Matthew Kroenig, "The Renewed Russian Nuclear Threat and NATO Nuclear Deterrence Posture" (Washington, DC: Atlantic Council, 2016).

(2) The Balance of Conventional Forces

Second, the balance of conventional forces also influences whether the revisionist's nuclear shield successfully deters intervention, because the need and the consequences of external intervention depend on it.

Putting aside the capabilities brought by external stakeholders for the moment, much depends on the local balance of power between the aggressor and its target state. Does the aggressor possess an overwhelming advantage sufficient to achieve a fait accompli through a short campaign? If the target state's territory is swiftly overrun, without enough time for a third party to assess the situation and take decisive action, the aggressor will then establish defensive lines in the occupied areas to consolidate the gains. The external actor would then face soaring risks and costs for an offensive campaign to break through the defensive lines and regain the lost territories. In that scenario, the threshold for intervention would be comparatively high. In the opposite case where the balance of power between the local parties is not heavily skewed and the target state is capable of putting up an effective resistance on its own, the external actor will not have a strong incentive for direct intervention, either, because there is little need for it.

In other words, external intervention is most likely in between these two extreme scenarios. It is a situation where the local balance of conventional forces is such that the aggressor cannot achieve a quick fait accompli, but direct intervention is still necessary to prevent changes to the status quo. Moreover, the costs and risks associated with direct intervention must remain within an acceptable range, and there needs to be a reasonable prospect that such intervention would meaningfully alter the course of the conflict.

In the Russo-Ukrainian War, Russia's initial offensive aimed at a swift victory by capturing Kyiv ended in failure, and the situation on the frontlines in eastern Ukraine gradually reached a stalemate. Under these circumstances, the West has consistently shown disinclination to intervene directly. From the perspective of making Ukraine a geopolitical buffer zone against Russia, the minimum Western objective can be achieved as long as Ukraine does not suffer a decisive defeat, even if Ukraine is unable to fully restore the status quo ante. That is, as long as Ukraine's military resistance does not collapse, the continuation of indirect assistance allows the West to

pass the buck to Ukraine.[48] Realistically, rolling back the Russian occupation of Crimea and Ukraine's eastern provinces would require a direct NATO intervention, and that option would be prohibitively costly for the U.S. and European patrons.

However, if the external intervention is expected to tip the balance of conventional forces, it can paradoxically *increase* the efficacy of the aggressor's nuclear shield. If the external actor possesses overwhelmingly superior conventional forces, such as NATO compared to Russia, the revisionist can issue nuclear threats that carry greater credibility than otherwise. In this scenario, the intervention can be successful in beating back the revisionist forces, but the momentum of the counteroffensive can also pose a threat (intended or not) to the revisionist state's homeland. This concern becomes especially pronounced in a geographic environment devoid of natural barriers that could serve as effective ceasefire lines. During the Korean War, for example, U.S. forces swiftly reversed the North Korean invasion and advanced northward toward the Yalu River. This was perceived as a threat by China and triggered its intervention.[49] In Ukraine, a large-scale intervention, even if it were intended to restore the pre-invasion status quo, could easily be perceived as a serious threat by Russia. Caught in a dilemma between resorting to nuclear use or accepting decisive defeat, the revisionist state would then be able to issue a credible nuclear threat. When the intervening external actor enjoys lopsided conventional superiority over the revisionist, it makes the intervention *less* likely because the risk of adversary nuclear escalation will be correspondingly high.

In sum, in terms of the balance of conventional forces, the incentives for direct intervention were not strong in the Russo-Ukrainian War because

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48) On the concept of buck passing, see Stephen M. Walt, *The Origins of Alliances* (Ithaca, NY: Cornell University Press, 1987); John J. Mearsheimer, *The Tragedy of Great Power Politics*, updated ed. (New York, NY: W. W. Norton, 2014).

49) The reasons for China's participation in the Korean War are not limited to security concerns arising from the loss of an independent North Korea and from the U.S. forces approaching China's border. Two more factors are also cited. First, the U.S. Navy's blockade of the Taiwan Strait forced China to shelve its plans for the "liberation of Taiwan," resulting in a surplus of available troops. Second, having repeatedly warned the United States not to cross the 38th parallel, China's "prestige" would have been jeopardized if it had not intervened with force against the U.S. military that ignored these warnings. Niu Jun, *Reisenki Chugoku gaiko no seisaku kettei* [China's foreign policy decision making during the Cold War], trans. Masui Yasuki (Chikura Shobo, 2007), 62–68.

Ukraine (with Western aid packages) was able to put up sustained resistance, and because of the risk of nuclear escalation in case of a NATO intervention that would put Russia at an instant disadvantage.

(3) Sustainability of Indirect Assistance

The third variable, though also related to the balance of conventional forces, is the sustainability of indirect assistance. From the potential intervener's perspective, the key question is whether indirect assistance can be a viable policy alternative to direct intervention for defeating revisionist ambitions.

Western aid packages have played an essential role in sustaining Ukraine's war effort. They include military platforms as well as ammunition and other supplies. As the battlefield conditions evolved, the aid packages have grown to include heavy equipment such as infantry fighting vehicles (e.g. U.S.-made M2 Bradley), main battle tanks (e.g. German-made Leopard 1 and 2, U.S.-made M1 Abrams, and U.K.-made Challenger 2), combat aircraft (e.g. F-16), and long-range artillery systems (e.g. HIMARS), all of which have enhanced the operational capabilities of the Ukrainian military. Japan has also contributed indirectly by exporting PAC-3 missiles back to the United States, helping to replenish U.S. inventories that were depleted due to transfers to Ukraine.[50]

As evidenced by the simultaneous multi-pronged invasion from the north and east, Ukraine had long and vulnerable land borders with Russia and Belarus. However, conditions were also in place that allowed Western countries to provide sustained assistance through overland routes. Relatively stable supply lines were established going through logistical hubs, such as Rzeszów–Jasionka Airport in southeastern Poland.[51] For Russia to disrupt these supplies, it would need either to launch missile strikes against logistical hubs in NATO territory or conduct air interdiction deep into Ukrainian airspace. However, striking NATO territory is out of the question because Russia seeks to localize the conflict, and the Russian Air Force has thus far failed to gain air superiority to operate deep inside the Ukrainian airspace. Although Russia has stealthy fifth-generation multirole aircraft, it has been

50) Mariko Oi, "Japan to Send Patriot Missiles to US Which May Aid Ukraine," BBC, December 22, 2023.

51) Sharon Weinberger, "In Poland's 'J-Town,' Soldiers Move Arms to Ukraine as Russian Spies Try to Stop Them," *Wall Street Journal*, September 30, 2023.

unable to conduct any large-scale air campaign within Ukrainian air defense perimeters.

While this indirect assistance has imposed a considerable burden on the United States and European countries, it would still be much less than the enormous financial and human costs that are expected in case of direct intervention. To the extent that indirect assistance enabled Ukraine to halt the Russian advance, the incentive for direct intervention diminished all the more.

To sum up, Russia's nuclear threats successfully deterred direct Western intervention in the Russo-Ukrainian War not only because of the deterrent effect of Russia's powerful nuclear forces. The incentives for direct intervention were also kept low because of the particular configurations of the balance of conventional forces and the sustainability of indirect assistance, which allowed Ukraine to put up effective defense. Somewhat paradoxically, the fact that the Russian military was not as effective as previously anticipated worked in favor of localizing the conflict. Unlike the Soviet days, Russian military power is nowhere near the level to pursue regional hegemony in Europe. The intensity of balancing among states depends on the magnitude of the threat. Although Russian nuclear forces pose a large enough threat for the West to avoid any risk of direct military clash, Russia's conventional military power does not pose such a significant threat as to call for a direct U.S./NATO intervention. As a result, the proxy war in Ukraine remains localized.

The Nuclear Shadow Cast by a Taiwan Contingency

What, then, can be said about Taiwan, the most dangerous potential hotspot amid deepening U.S.-China competition? From the Chinese perspective, the lessons from the Russo-Ukrainian War can be ambiguous. On the one hand, the Russian invasion devolved into a protracted war of attrition, which might reinforce a view that a Taiwan contingency would also involve an enormous risk for China.[52] It may also be added that the Western solidarity in imposing sweeping economic sanctions on Russia sets an example in China's decision

52) M. Taylor Fravel, "China's Potential Lessons from Ukraine for Conflict over Taiwan," *The Washington Quarterly* 46, no. 3 (July 3, 2023): 7–25.

calculus. On the other hand, some Chinese experts view Russia's strategy of using the nuclear shield to deter external intervention as an instructive lesson.[53] If China were to pursue unification by force, it would be entirely possible for China to issue some nuclear threats in an attempt to deter external intervention while using conventional forces to seize the island.

In a typical "worst-case" Taiwan contingency scenario, China believes U.S. intervention to be inevitable, and launches a preemptive strike on U.S. naval and air assets located in Japanese territory. This would automatically draw Japan, as well as the United States, into the conflict. However, this chapter focuses on a different scenario, one in which China seeks to localize the conflict by limiting the area of operations to Taiwan and by using the nuclear shield to deter external intervention. China's ongoing nuclear buildup and potential blockade of Taiwan have raised the salience of this kind of scenario.

Similar to the analysis of the Russo-Ukrainian War, the following three sub-sections examine the effectiveness of China's nuclear shield across three key variables: (1) the balance of nuclear forces, (2) the balance of conventional forces, and (3) the sustainability of indirect assistance. Lastly, the fourth sub-section briefly discusses the issue of political resolve surrounding Taiwan.

The Balance of Nuclear Forces between the United States and China

First, the balance of nuclear forces between the United States and China differs significantly from that between the United States and Russia. Ever since Mao Zedong referred to nuclear weapons as "a paper tiger," China has traditionally assigned a relatively limited role to nuclear weapons compared to the United States and the Soviet Union.[54] Even today, during

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53) Minnie Chan, "PLA Adopts Nuclear Deterrence to Stop Foreign Intervention on Taiwan: Analysts," *South China Morning Post*, August 21, 2022; David Sacks, "What Is China Learning from Russia's War in Ukraine?," *Foreign Affairs*, May 16, 2022.

54) Of course, Mao Zedong's "paper tiger" remark should not be exaggerated. Mao himself understood the importance of nuclear deterrence and actively promoted China's nuclear development program. Still, China assigned a more limited role to nuclear weapons than did the United States and the Soviet Union, as the two superpowers were considering nuclear war-fighting strategies at the time. Yamaguchi Shinji, *Motakuto no kyokokuka senryaku 1949–1976* [Mao Zedong's strategy for a stronger country 1949–1976] (Keio Gijuku Daigaku Shuppankai, 2021); John W. Lewis and Xue Litai, "Making China's Nuclear War Plan," *Bulletin of the Atomic Scientists* 68, no. 5 (March 1, 2012): 45–65.

the Russo-Ukrainian War, President Xi Jinping reportedly urged President Putin to refrain from using nuclear weapons.[55] China's restrained nuclear policy is symbolized by NFU, by which China commits itself not to use nuclear weapons first under any circumstances. Furthermore, the minimal deterrence doctrine meant that China possessed only a few dozen single-warhead intercontinental ballistic missiles (ICBMs) for decades following its successful nuclear test in 1964.[56] Traditionally, China's nuclear weapons have always been under the control of the Central Military Commission, and the warheads and delivery vehicles are stored separately. The Chinese political leadership is also believed to be highly reluctant to delegate authority over nuclear weapons to military commanders.[57]

China's nuclear posture emphasizes the survivability of its second-strike forces after absorbing an enemy first strike. Many of the recent developments in China's nuclear forces can be understood within this context.[58] For example, the following items contribute to the Chinese version of the "nuclear triad" to ensure a highly survivable second-strike capability: approximately 300 new ICBM silos that have been built in China's north and northwestern provinces; road-mobile ICBMs such as DF-41 and DF-31AG; and Jin-class nuclear-powered ballistic missile submarines (SSBNs), which are reportedly conducting deterrence patrols equipped with the new

55) "China's Xi Warns Putin Not to Use Nuclear Arms in Ukraine," *Politico*, November 4, 2022.

56) Fiona S. Cunningham and M. Taylor Fravel, "Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability," *International Security* 40, no. 2 (2015): 7–50; M. Taylor Fravel, *Active Defense: China's Military Strategy since 1949* (Princeton, NJ: Princeton University Press, 2019).

57) David Shambaugh, *Modernizing China's Military: Progress, Problems, and Prospects* (Berkeley, CA: University of California Press, 2002).

58) Thomas J. Christensen, "The Meaning of the Nuclear Evolution: China's Strategic Modernization and US-China Security Relations," *Journal of Strategic Studies* 35, no. 4 (August 1, 2012): 447–487; Caitlin Talmadge, "The US-China Nuclear Relationship: Why Competition Is Likely to Intensify," Brookings Institution (September 2019); Oriana Skylar Mastro, "China's Nuclear Enterprise: Trends, Developments, and Implications for the United States and Its Allies," *Project Atom 2023: A Competitive Strategies Approach for U.S. Nuclear Posture through 2035* (Washington, DC: Center for Strategic and International Studies, September 2023), 26–37.

JL-3 submarine-launched ballistic missiles (SLBM) capable of reaching the U.S. mainland with a range of 12,000 to 14,000 kilometers.[59]

Table 4.1. U.S., Russian, and Chinese nuclear forces (as of January 2024)

	Deployed warheads	Stored warheads	Retired warheads	Total
United States	1,770	1,938	1,336	5,044
Russia	1,710	2,670	1,200	5,580
China	24	476	—	500

Source: Prepared by the author based on Stockholm International Peace Research Institute (SIPRI), *SIPRI Yearbook 2024: Armaments, Disarmament and International Security* (June 2024); U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2023* (October 2023); International Institute for Strategic Studies (IISS), *Military Balance 2024* (February 2024).

However, the scale and speed of China's nuclear buildup have drawn suspicions that they are meant to go beyond pure second-strike capability and acquire "usable" nuclear forces at the theater and tactical levels. China has already embarked on a massive buildup of its nuclear warhead stockpile. According to the latest version of the U.S. Department of Defense's (DOD) annual report released in December 2024, China's nuclear inventory grew by 100 warheads from the previous year to a total of 600. The report further estimates that this number will exceed 1,000 by 2030, with the majority expected to be operationally deployed.[60] While the exact numbers are debatable, there is little doubt that a large-scale expansion is currently under way.[61] Moreover, many of the intermediate-range ballistic missiles that China has fielded in large numbers are believed to be dual-capable, meaning they can carry both nuclear and conventional warheads. If China also has miniaturized, low-yield warhead designs, then they could be mounted on these missiles to be employed as tactical nuclear weapons.

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59) The DF-31AG is an improved version of the DF-31 with extended range. It is thought to have been launched during an ICBM test conducted by the PLA Rocket Force on September 25, 2024. Seong Hyeon Choi and Sylvie Zhuang, "What Do We Know about the DF-31 Variant Used in China's Recent ICBM Test?," *South China Morning Post*, September 27, 2024.

60) U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2023* (October 2023).

61) The Stockholm International Peace Research Institute (SIPRI) leaves a reservation: "This projection relies, however, on several assumptions about China's future force posture and plutonium production; it remains to be seen how accurate they are." SIPRI, *SIPRI Yearbook 2024*, 315.

In addition to the concerns about the quantitative buildup, questions have been raised about potential changes to China's nuclear doctrine. The rationalist literature suggests that China's NFU policy is mere "cheap talk" that incurs no cost even if violated.[62] While there might be some reputational costs in reneging on one's declaratory policy, the credibility of a nuclear doctrine ultimately depends on whether the country's actual force posture aligns with the stated doctrine. Indeed, China's longtime minimal deterrence doctrine was credible because the force posture based on a relatively small number of ICBMs offered little capability to conduct a meaningful first strike. However, concerns have recently emerged that China may be building a launch-on-warning (LOW) posture by fielding some solid-fuel missiles with nuclear warheads already uploaded on them. Moreover, if China acquires limited nuclear options, as discussed earlier, it is only natural that concerns would arise over whether this indicates a shift in the underlying operational doctrine.[63]

For example, Caitlin Talmadge warns that if China's nuclear forces and command, control, and communications (NC3) systems were placed at risk by U.S. strikes, then China might resort to the first use of nuclear weapons.[64] Even if the intent is to target China's conventional forces, it is difficult to fully discriminate between Chinese conventional and nuclear assets co-located in some bases. Amid the chaos, Chinese leaders might mistakenly perceive that the U.S. strikes are meant to disarm Chinese nuclear forces. The "use it or lose it" pressure in Chinese minds poses a significant risk of escalation instability.

However, as long as China maintains strict centralized control of its nuclear weapons, there is some room for debate as to whether the simple logic of "better to use it than lose it" would lead to a premature and irrational escalation. Premature nuclear escalation would be militarily self-

62) 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.

63) 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): 147–187.

64) Caitlin Talmadge, "Would China Go Nuclear?: Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States," *International Security* 41, no. 4 (2017): 50–92. See also Wu Riqiang, "Assessing China-U.S. Inadvertent Nuclear Escalation," *International Security* 46, no. 3 (February 25, 2022): 128–162.

defeating when one's nuclear forces are at an even greater disadvantage than conventional forces are. A contrasting example is the United States' forward deployment of tactical nuclear weapons in Europe during the Cold War. The United States created the "use it or lose it" pressure for itself in case of a Soviet invasion of Western Europe. The strategy was effective because the United States held clear nuclear superiority in the 1950s to 1960s—the U.S. nuclear superiority served as a "great equalizer" against the Soviet conventional superiority. Moreover, while forward-deployed nuclear warheads technically remained under U.S. control and the U.S. President had the final authority for determining their usage, delegation mechanisms were put in place for a contingency. In practice, there were times when safeguard mechanisms were loose enough that the allies on the front could have used the bomb prematurely.[65] In other words, in case of a Soviet invasion, field commanders could have acted hastily and used nuclear weapons. That is, the threat was indeed "left to chance" to some degree. This strategy could be adopted because of U.S. nuclear superiority, even with some risk of unintended nuclear escalation.

In contrast, China's nuclear forces still lag behind those of the United States. Unlike Russia, China has not adopted a nuclear doctrine that assigns a major role to tactical nuclear weapons. As a result, both the scale and variety of tactical nuclear weapons are limited in China's force posture. As of writing, it appears that only the DF-26 among China's theater-level missile forces has been assigned a nuclear mission. Of the six DF-26 brigades (216 transporter erector launchers), approximately half have reportedly been assigned a nuclear mission.[66] While it is said that the DF-26 is capable of rapidly switching between conventional and nuclear warheads, the operational procedures of those nuclear warheads remain unclear. As of yet, China's tactical and theater-level nuclear forces are not as significant as their Russian counterparts in creating the linkage between large-scale conventional war and nuclear war under the logic of the stability-instability paradox. However, there remains a potential concern that China will further expand the scope of nuclear mission assignment in the future.

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65) Hans M. Kristensen et al., "Nuclear Weapons Sharing, 2023," *Bulletin of the Atomic Scientists*, November 2, 2023.

66) *SIPRI Yearbook 2024*. See also International Institute for Strategic Studies (IISS), *Military Balance 2024* (February 2024), Chapter 6.

Though far more limited than those of Russia, the United States, too, has non-strategic nuclear forces. The maritime geography of East Asia suggests tactical nuclear weapons have a somewhat different role than in Europe, where they are forward-deployed as insurance against a massive ground invasion. The United States maintains a diverse set of tactical nuclear options delivered via sea and air platforms. For example, it has deployed not only B61 bombs carried by dual-capable aircraft, such as the F-35 and B-2, but also the Trident II (D5) SLBM equipped with W76-2 low-yield warheads, which was announced in the 2018 NPR. It is noteworthy that although the U.S. government and Navy were hesitant about deploying nuclear-armed sea-launched cruise missiles (SLCM-N), Congress has increased funding for their development and mandated their initial operational capability (IOC) by 2034.[67]

Ultimately, at the strategic level, the United States enjoys nuclear superiority over China with its vast strategic nuclear forces and damage limitation capabilities.[68] While the number of deployed nuclear warheads has remained at approximately 1,770, partially due to constraints under the New START Treaty, the United States also possesses approximately 2,000 stored warheads. If pressed, it is not very difficult for the United States to maintain numerical superiority. The U.S. DOD estimate ("over 1,000 warheads by 2030") indicates the upper range of China's nuclear buildup based on assumptions about China's increased plutonium production, construction and loading of ICBM silos, and the deployment of multiple warheads on each missile. There is no verifying the actual number with publicly available information. While China could very well continue to

67) Congressional Research Service, "Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N)" (July 19, 2024).

68) Damage limitation here means something far more limited than the disarming first-strike capability that the United States once enjoyed against China's small nuclear arsenal. It is unlikely that the United States will regain overwhelming nuclear superiority in the traditional sense. Meanwhile, some argue that recent technological advancements have made counterforce strikes more feasible. Charles L. Glaser and Steve Fetter, "Should the United States Reject MAD? Damage Limitation and U.S. Nuclear Strategy toward China," *International Security* 41, no. 1 (2016): 49–98. Keir A. Lieber and Daryl G. Press, "The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence," *International Security* 41, no. 4 (April 1, 2017): 9–49; Daryl G. Press, "Deterrence and Arms Control in an Era of Rapid Technological Change," in *NIDS International Symposium on Security Affairs 2023: The New Horizon of the Nuclear Era* (November 2024), 19–31.

build up nuclear forces and pursue full parity with the United States in the long run, the current observable trends suggest that the United States still enjoys superiority. All other things equal, the nuclear superiority should give the United States a certain advantage in a risk-taking contest with China.[69]

Apart from the nuclear superiority school that emphasizes differences in capabilities, deterrence theory also suggests that strategic stability will be reinforced, not diminished, as China obtains truly survivable second-strike capability. Either way, the conclusion is the same: China has little incentive to start a nuclear war.[70] As noted above, much of China's nuclear buildup is aimed at improving the survivability of its strategic nuclear forces. If so, the risk of China facing a "use it or lose it" dilemma in a large-scale conventional war would actually decrease.[71] With a large and diversified force posture, it will be easier to absorb some damage to the system and maintain a second-strike capability that can inflict unacceptable damage on the adversary. That should give a measure of confidence to Chinese leaders and contribute to crisis stability.

If China were to consider the first use of nuclear weapons, it would be as a signal to demonstrate resolve. For example, Chinese leaders might resort to brinkmanship tactics with a nuclear explosion that causes little to no material damage. However, it remains questionable whether such a demonstration would affect the U.S. risk calculus enough to compel U.S. forces to immediately stand down or withdraw. If the United States were to abruptly reverse course and withdraw in the face of a nuclear threat, it would incur significant reputational costs that hollow out U.S. global security

69) Matthew Kroenig, "Nuclear Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes," *International Organization* 67, no. 1 (2013): 141–171; Hal Brands, "Deterrence in Taiwan Is Failing," *Foreign Policy*, September 8, 2023.

70) Wu Riqiang, "Living with Uncertainty: Modeling China's Nuclear Survivability," *International Security* 44, no. 4 (April 1, 2020): 84–118.

71) Evan Braden Montgomery and Toshi Yoshihara, "Speeding Toward Instability? Hypersonic Weapons and the Risks of Nuclear Use" (Washington, DC: Center for Strategic and Budgetary Assessments, 2023).

commitments.[72] Elbridge Colby, nominated as Under Secretary of Defense for Policy for the second Trump administration, argues for "differentiated credibility" across many U.S. security commitments, but also observes that the U.S. commitments in East Asia are "very tightly coupled" for the purpose of confronting China and therefore cannot easily be abandoned individually.[73] According to a group of U.S. experts on Taiwan:

> There also is broad recognition in the American strategic community that Taiwan's security is critical for peace and stability in the Indo-Pacific. Taiwan is one of the few issues that could spark a great-power conflict between the United States and China. The steadfastness of American support for Taiwan's security in the face of the threat from China serves as a source of confidence for American security partners around the world that the United States remains unflinching in support for its allies and partners.[74]

In this logic, the abandonment of Taiwan would cause other regional countries, especially Japan, to reassess the credibility of U.S. commitments. Of course, as the classic alliance dilemma suggests, allies wish to avert not only the risk of abandonment by the United States but also the risk of entrapment in an unwanted armed conflict.[75] Nonetheless, the abandonment of Taiwan,

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72) On reputational costs, see Maeda Yuji, "Reputation as a Means of Deterrence and Compellence," in *New Horizons of the Nuclear Age*, English edition, ed. Ichimasa, 137–147. Some believe that the U.S. commitment to Taiwan should be renounced, arguing for a "grand bargain" that delineates spheres of influence between the United States and China. However, the grand bargain proposals typically seek a diplomatic resolution in peacetime and do not call for abandoning Taiwan in the face of a crisis or conflict. Moreover, there is considerable opposition to this argument. Nancy B. Tucker and Bonnie Glaser, "Should the United States Abandon Taiwan?," *The Washington Quarterly* 34, no. 4 (October 1, 2011): 23–37; Charles L. Glaser, "A U.S.-China Grand Bargain? The Hard Choice between Military Competition and Accommodation," *International Security* 39, no. 4 (2015): 49–90; Ely Ratner, "There Is No Grand Bargain with China: Why Trump and Xi Can't Meet Each Other Halfway," *Foreign Affairs*, November 27, 2018.

73) Elbridge A. Colby, *The Strategy of Denial: American Defense in an Age of Great Power Conflict* (New Haven, CT: Yale University Press, 2021), 62.

74) Ryan Hass, Bonnie Glaser, and Richard Bush, *U.S.-Taiwan Relations: Will China's Challenge Lead to a Crisis?* (Washington, DC: Brookings Institution Press, 2023), 5.

75) Glenn H. Snyder, "The Security Dilemma in Alliance Politics," *World Politics* 36, no. 4 (1984): 461–495; Glenn H. Snyder, *Alliance Politics* (Ithaca, NY: Cornell University Press, 1997); Iain D. Henry, "What Allies Want: Reconsidering Loyalty, Reliability, and Alliance Interdependence," *International Security* 44, no. 4 (April 1, 2020): 45–83.

which has close geographical, political, and economic ties with Japan, would have profound consequences that extend beyond the simplistic analogy of "if Taiwan is abandoned, then Japan will be next." Taiwan falling under China's effective control would have grave strategic repercussions for the territorial integrity of Japan's southwestern islands and the security of sea lanes. Abandoning Taiwan would reverberate as a signal that Washington disregards Japan's security concerns.

In other words, the United States effectively has its hands tied by the security commitments to other regional countries, which may as well be helpful in conveying resolve in crisis bargaining over Taiwan. From this perspective, the United States, in the face of a Chinese nuclear threat, might consider options other than withdrawing unilaterally and accepting a dramatic decline in its international influence. U.S. leaders could at least consider proportionate responses to China's nuclear threat, such as conducting a show of nuclear explosion of its own, followed by a proposal of a mutual halt of operations. In short, even if China resorts to threatening the first use of nuclear weapons to "escalate to deescalate," it does not automatically give China the upper hand in a contest of risk-taking with the United States.

The Balance of Conventional Forces between the United States, China, and Taiwan

Second, in terms of the local balance of conventional forces, a Taiwan contingency could resemble the Russo-Ukrainian War in key respects. On the one hand, China will have trouble establishing a quick fait accompli by seizing Taiwan through a surprise attack. On the other hand, Taiwan will have difficulty sustaining resistance on its own in the case of a prolonged conflict. However, the balance of conventional forces shifts dramatically when direct U.S. intervention is taken into account.

First, the insular geography gives Taiwan a certain defensive advantage unlike Ukraine, which has no natural barriers with Russia. Of course, Taiwan's main island, particularly the flatland where the population is concentrated, is small and lacking in strategic depth. The populated areas have well-developed transportation infrastructure, including roads. If major cities, airports, and ports along the Taiwan Strait are captured, there is a risk that enemy forces will be reinforced in a snowballing manner, making

it difficult to establish an effective defensive line. However, this risk only materializes if the PLA succeeds in landings on a scale that could execute ground operations in Taiwan. A massive amphibious operation would require the PLA to neutralize Taiwan's air defense systems and anti-ship assets to secure naval and air superiority first. That would be no easy accomplishment. Many analysts suggest the battlefields around Taiwan and the Western Pacific more broadly will likely become a "no man's sea," in which the maritime geography and the mass of precision-strike capabilities deny both sides' power projection.[76] The recent wargames on Taiwan indicate that it would indeed be very difficult for the PLA to seize Taiwan by force.[77]

A key point to note here is the difficulty of achieving surprise in the modern strategic environment that is characterized by highly advanced information technology. As U.S. intelligence agencies issued warnings prior to Russia's invasion of Ukraine, mobilization for a large-scale military invasion is accompanied by corresponding signs. Given the United States' and its allies' advanced intelligence-gathering capabilities, it is unlikely that China will be able to launch a complete surprise attack in a Taiwan contingency. A naval blockade might be executable in short order by assembling vessels under the guise of a naval exercise. However, a large-scale amphibious operation on Taiwan's main island would involve large concentrations of amphibious assault ships, transport vessels and aircraft at bases, airports, and ports that would serve as logistical hubs, as well as missile brigades preparing to strike Taiwanese targets. Such major movements of troops and equipment should be observable inside and outside China's Eastern Theater Command. If timely warning is received, Taiwan would be

76) Robert S. Ross, "The Geography of the Peace: East Asia in the Twenty-First Century," *International Security* 23, no. 4 (1999): 81–118; Patrick Porter, *The Global Village Myth: Distance, War, and the Limits of Power* (Washington, DC: Georgetown University Press, 2015); Stephen G. Brooks and William C. Wohlforth, *America Abroad: Why the Sole Superpower Should Not Pull Back from the World* (Oxford: Oxford University Press, 2016); Stephen Biddle and Ivan Oelrich, "Future Warfare in the Western Pacific: Chinese Antiaccess/Area Denial, U.S. AirSea Battle, and Command of the Commons in East Asia," *International Security* 41, no. 1 (2016): 7–48; Michael Beckley, "The Emerging Military Balance in East Asia: How China's Neighbors Can Check Chinese Naval Expansion," *International Security* 42, no. 2 (November 1, 2017): 78–119.

77) Mark F. Cancian, Matthew Cancian, and Eric Heginbotham, *The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan* (Washington, DC: Center for Strategic and International Studies, 2023).

able to take precautionary measures, such as dispersion and concealment, to improve survivability of its defensive assets. This, inversely, would reduce China's prospect for securing naval and air superiority.

However, it is also hard to deny that, in a prolonged conflict, Taiwan would have difficulty sustaining its defensive efforts on its own. Even if a Chinese attempt to win a short war and establish a fait accompli is thwarted, it is overly optimistic to assume that the conflict would end there. A more likely scenario is a protracted war like the Russo-Ukrainian War.[78] China and Taiwan have stark disparities in the size of their military and military industrial capacities. In a war of attrition involving an exchange of vessels, aircraft, missiles, and other assets across the Taiwan Strait, it is as clear as day that Taiwan would be at a disadvantage in the long term. To be sure, the United States has provided support to enable Taiwan to become a "porcupine" that can defend itself through advanced denial capabilities.[79] Jeffrey Bader, senior director for Asian affairs on the National Security Council during the Obama administration, once wrote that one of the rationales behind the U.S. arms sales to Taiwan was "to provide Taiwan with the wherewithal to withstand a Chinese attack long enough for U.S. assistance to turn the tide."[80] Such assistance was meant to deny a short war, rather than build an industrial base essential for attritional warfare. Improving Taiwan's resiliency to fight a long war remains a challenge.[81]

In sum, the local balance of power across the Taiwan Strait is somewhat similar to that of the Russo-Ukrainian War: while a short war (i.e. a fait accompli to change to status quo) is unlikely, Taiwan will have difficulties sustaining a prolonged resistance on its own. Therefore, there is potentially much room for external intervention. A report by RAND Corporation reaches a similar conclusion that Taiwan would be unable to put up

78) Hal Brands and Michael Beckley, "Washington Is Preparing for the Wrong War with China: A Conflict Would Be Long and Messy," *Foreign Affairs*, December 16, 2021.

79) Jim Thomas, John Stillion, and Iskander Rehman, *Hard ROC 2.0: Taiwan and Deterrence Through Protraction* (Washington, DC: Center for Strategic and Budgetary Assessments, 2014); Congressional Research Service, "Taiwan Defense Issues for Congress," May 10, 2024; Jonathan Masters and Will Merrow, "U.S. Military Support for Taiwan in Five Charts," Council on Foreign Relations, September 25, 2024.

80) Jeffrey A. Bader, *Obama and China's Rise: An Insider's Account of America's Asia Strategy* (Washington, DC: Brookings Institution Press, 2012), 71.

81) See Chapter 3 for details.

prolonged resistance by itself in a large-scale conflict, and that direct U.S. intervention would be necessary.[82]

However, the differences between Taiwan and the Russo-Ukrainian War deserve an emphasis, considering how external intervention would change the balance of conventional forces. As discussed above, Russia is expected to face a decisive disadvantage against NATO forces, which gives greater credibility to Russia's threats of nuclear escalation in response to NATO's direct intervention. In the Western Pacific, China has rapidly modernized its land, naval, and air forces as well as building up the powerful missile inventory. The Chinese capabilities have now grown to the point of undermining the superiority of U.S. power projection at the theater level. Moreover, just as an amphibious operation against Taiwan is challenging, it is equally or even less realistic that an external intervention threatens an invasion of mainland China. The anti-access/area-denial (A2/AD) capabilities China has developed are specifically intended to counter such threats. Indeed, various Western simulations assume nothing beyond airstrikes or missile attacks on mainland China. The less likely it is for China to face a catastrophic defeat, the less credible the threat of nuclear use will be. In fact, some scholars note a growing concern within the Chinese strategic community about the use of nuclear weapons to compensate for conventional shortcomings, not by China but rather the United States.[83]

Apart from the physical threat to mainland China, Chinese leaders might subjectively worry that a failure to achieve unification by force would undermine the legitimacy of the Communist Party regime. Once in a crisis or conflict, backing down generates domestic audience costs, which encourage national leaders to choose escalation over concessions.[84] However, empirical studies have raised doubts about how much domestic audience costs actually

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82) Timothy R. Heath, Sale Lilly, and Eugeniu Han, *Can Taiwan Resist a Large-Scale Military Attack by China?: Assessing Strengths and Vulnerabilities in a Potential Conflict* (Santa Monica, CA: RAND Corporation, 2023).

83) Hiim, Fravel, and Trøan, "The Dynamics of an Entangled Security Dilemma."

84) James D. Fearon, "Domestic Political Audiences and the Escalation of International Disputes," *American Political Science Review* 88, no. 3 (1994): 577–592; Michael Tomz, "Domestic Audience Costs in International Relations: An Experimental Approach," *International Organization* 61, no. 4 (2007): 821–840; Kenneth A. Schultz, "Why We Needed Audience Costs and What We Need Now," *Security Studies* 21, no. 3 (2012): 369–375.

influence a state's decision-making on the use of force.[85] The constraints on backing down are not unique to China, either. As discussed earlier, even if China were to resort to a limited nuclear strike as a form of brinkmanship, it remains uncertain whether China would gain the upper hand in a contest of risk-taking with the United States. Such a high-risk, high-reward strategy would only be viable under the assumption that Chinese leaders have a very high-risk tolerance. Of course, the perceptions of Chinese leaders are impossible for us to predict. Still, at least, the potential military threat posed to mainland China by a U.S.-led counteroffensive is objectively lower than that faced by Russia.

The purpose of this chapter is to examine whether a revisionist state possessing nuclear weapons can deter external intervention. Hence, the specific forms of direct U.S. military intervention are beyond the scope of this analysis. That said, it is important to note that direct intervention at the sub-nuclear level can take various forms, as was highlighted in the discussion on the stability-instability paradox. If there are some military operational designs that mitigate the risk of nuclear escalation as much as possible, the threshold for direct intervention could be lowered.

In this respect, it would make sense to propose a denial strategy that minimizes strikes against China's missile forces entangled with nuclear assets and, instead, concentrate on (1) China's air defense systems, followed by (2) strategic transport capabilities (such as amphibious assault ships, transport vessels, and transport aircraft) that could be used for an amphibious landing on Taiwan. Neutralizing China's missile forces is attractive as a way of minimizing our losses. But for thwarting China's strategic goals, it will be effective to destroy the strategic transport capabilities thoroughly, which are relatively vulnerable and not too "entangled" with nuclear assets. Even within China's A2/AD bubble, survivable sea and air platforms, such as stealth aircraft and attack submarines, as well as ground-launched missiles, will be able to achieve significant results by targeting Chinese vessels and aircraft because they are limited in quantity and vulnerable. If such

85) Marc Trachtenberg, "Audience Costs: An Historical Analysis," *Security Studies* 21, no. 1 (2012): 3–42; Alexander B. Downes and Todd S. Sechser, "The Illusion of Democratic Credibility," *International Organization* 66, no. 3 (2012): 457–489; Joshua D. Kertzer and Ryan Brutger, "Decomposing Audience Costs: Bringing the Audience Back into Audience Cost Theory," *American Journal of Political Science* 60, no. 1 (2016): 234–249.

operational designs are feasible, then it becomes more viable to commit to direct intervention while also managing escalation risks.

Indirect Assistance for Taiwan

Even more significant is the third variable: the sustainability of indirect assistance. Once again, there is a critical difference from the case of Ukraine, which is connected by land to NATO countries and gifted with external supply lines. By contrast, Taiwan's insularity has a dual characteristic. Over the short term, it offers a defensive advantage by making an amphibious invasion difficult. In a prolonged war of attrition, however, it causes difficulties in securing supply lines from external actors.

Since the entire Taiwan theater lies within China's A2/AD bubble, providing logistical support from the outside will likely be challenging.[86] If China were to invade Taiwan, it is highly probable that a blockade of some kind would be imposed on the island. Then it will be impossible to aid Taiwan without accepting some risk of clashing with the PLA forces enforcing the blockade at sea and in the air. Even if a maritime blockade were not imposed, all transport vessels and aircraft providing assistance to Taiwan would be exposed to the threat of China's numerous anti-ship and surface-to-air missiles—risks that are greater than in the Russo-Ukrainian War. Furthermore, Taiwan's key ports and airports are concentrated along the Strait. If the infrastructure is damaged by Chinese strikes, it could become difficult for Taiwan to handle large volumes of supplies.

The less feasible it is to take the indirect assistance approach to avoid direct confrontation with China, the more necessary it will be to consider direct intervention seriously. On the flip side, it is also theoretically possible that China deliberately tolerates indirect assistance to Taiwan in order to avoid drawing the U.S. forces into the conflict. However, given China's dissatisfaction even with U.S. arms sales in peacetime, it is highly questionable whether there is domestic political leeway to overlook a situation in which U.S. assistance obstructs Taiwan unification.

Therefore, if Taiwan is expected to face unfavorable odds alone, and if indirect assistance to sustain Taiwan's military resistance proves difficult,

86) See Chapter 5 for details.

then the United States will face a pressing need to consider direct intervention while weighing the potential risks of nuclear escalation.

Political Resolve in a Taiwan Contingency

Up to this point the discussion has focused primarily on capabilities, but a more comprehensive analysis must also consider political resolve. As is well known, the U.S. commitment to Taiwan is one of strategic ambiguity because it is not a formal treaty obligation but grounded in domestic legislation. The Taiwan Relations Act only requires the U.S. government to maintain the capacity to resist aggression or coercion on Taiwan. Nevertheless, the historical background of Taiwan as a former treaty ally and the explicit legal basis provided by domestic law make the political weight of the U.S. defense commitment to Taiwan more substantial than anything promised to Ukraine. Additionally, the United States and Taiwan have a highly advanced trade relationship epitomized by the semiconductor supply. In contrast to his almost immediate rejection of the idea of direct intervention in Ukraine, President Biden repeated four times that the United States would intervene if Taiwan were attacked.[87] Within the U.S. foreign policy community, there is much debate about whether Washington should or should not abandon strategic ambiguity and clarify the commitment to Taiwan. Regardless, there is no doubt a mainstream consensus on the need to strengthen U.S. capabilities to respond to a Taiwan contingency.[88] In this context, the policy direction of the second Trump administration will demand attention.

In addition, although discussions on Taiwan tend to emphasize the political and diplomatic dimensions—namely, the credibility of commitments and reputational costs—Taiwan's strategic value, both military and economic,

87) Hal Brands, "Deterrence in Taiwan Is Failing," *Foreign Policy*, September 8, 2023.

88) Richard Haass and David Sacks, "American Support for Taiwan Must Be Unambiguous," *Foreign Affairs*, September 2, 2020; Alastair Ian Johnston et al., "The Ambiguity of Strategic Clarity," *War on the Rocks*, June 9, 2021; Bonnie S. Glaser, Jessica Chen Weiss, and Thomas J. Christensen, "Taiwan and the True Sources of Deterrence," *Foreign Affairs* 103, no. 1 (November 30, 2023): 88–100; Michael Cunningham, "Should the USA Maintain Its Policy of Strategic Ambiguity Towards Taiwan?," The Heritage Foundation, June 24, 2024.

should not be overlooked.[89] If Taiwan were to fall under China's effective control, the result will not just be a 300-kilometer southeastward expansion of China's A2/AD bubble. The United States would also find itself at a disadvantage in the contest for naval superiority in the Philippine Sea and the entire Western Pacific.[90] Moreover, the security of sea lanes that are vital to Japan's survival would be potentially endangered. In view of the current disputes where China is militarizing the South China Sea and treating it as though it were its own internal waters, the outlook would be grim should China bring Taiwan under its control. The higher the estimated strategic importance of Taiwan, the stronger the potential resolve for intervention should be.

Moreover, the political resolve of the Taiwanese themselves can also be crucial. When a client has weak governance and little political will, external assistance is unlikely to produce meaningful results. For example, during the Vietnam War, the United States supported the corrupt South Vietnamese government. However, for all the resources that were poured in, the investment provided little return.[91] In contrast to such examples, today's Taiwan has achieved remarkable economic growth through outstanding socioeconomic governance and is maturing as a democratic polity. In his Double Ten Day address, President Lai Chingte, who took office in May 2024, declared that "The People's Republic of China has no right to represent Taiwan," vowing to defend Taiwan's sovereignty and maintain peace in the Taiwan Strait.[92] Under the Democratic Progressive Party (DPP) administration, Taiwan has accelerated its defensive preparations with U.S. assistance, pursuing an asymmetric denial strategy to repel invasion with

89) Maeda Yuji, "Chiseigaku no saiko: Chiseigaku to Beikoku no Taiwan boei komittomento" [Geopolitics revisited: A geopolitical model and the U.S. security commitment to Taiwan], *Security & Strategy* 1, no. 2 (October 2020): 57–78.

90) Alan M. Wachman, *Why Taiwan? Geostrategic Rationales for China's Territorial Integrity* (Stanford, CA: Stanford University Press, 2007); Brendan Rittenhouse Green and Caitlin Talmadge, "Then What? Assessing the Military Implications of Chinese Control of Taiwan," *International Security* 47, no. 1 (July 1, 2022): 7–45.

91) Stephen Peter Rosen, "Vietnam and the American Theory of Limited War," *International Security* 7, no. 2 (1982): 83–113; Caitlin Talmadge, "Different Threats, Different Militaries: Explaining Organizational Practices in Authoritarian Armies," *Security Studies* 25, no. 1 (January 1, 2016).

92) "Taiwan soto 'Chugoku ni Taiwan wo daihyo suru kenri nai' kokusai kadai de kyoryoku mo" [China cannot represent Taiwan and should work with Taipei on global challenges, Lai says], Reuters, October 10, 2024.

limited resources.[93] According to a public opinion survey conducted by Taiwan's government-affiliated Institute for National Defense and Security Research, 68% of respondents said they would be willing to fight to defend Taiwan in the event of a Chinese invasion, demonstrating the strong resolve among the Taiwanese public.[94]

On the other hand, there is also the risk that Taiwan's strong display of resolve could provoke China. For deterrence to work, a state must threaten to respond resolutely should the adversary take undesirable actions. At the same time, the state must provide reassurance that the status quo will be maintained so long as the adversary refrains from such actions. The U.S. basic policy toward China and Taiwan, known as "dual deterrence," is based precisely on this principle.[95] In this regard, Taiwan must continue to perform a diplomatic balancing act. President Lai's view is that there is no need to declare independence because Taiwan already exists as an independent sovereign state. His inaugural address emphasized Taiwan's autonomy and provoked a strong backlash from China, including military threats. However, he has also shown attempts to gradually soften his tone and align with the policy line of his predecessor, Tsai Ingwen.[96] The "status quo" that Taiwan seeks to maintain is extremely delicate, and patient efforts will be needed to strike a careful balance that neither provokes nor submits to China.

The above discussion suggests that China's nuclear threats in deterring intervention may be relatively ineffective compared to Russia's nuclear threats in the war with Ukraine. Even when China's military buildup and modernization are accounted for, the United States still maintains an overall superiority in the balance of nuclear forces. Taking into account the

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93) ROC Ministry of National Defense, *ROC National Defense Report 2023*. See also Eric Gomez, "Taiwan's Urgent Need for Asymmetric Defense," Cato Institute (blog), November 14, 2023.

94) "Chugoku shinko nara 'tatakaitai' Taiwanjin 68%: Anpo de yoronchosa, boei ni tsuyoi ketsui" [68% of Taiwanese "willing to fight" if invaded by China: Public opinion survey on security indicates strong self-defense determination], *Sankei Shimbun*, October 9, 2024.

95) Thomas J. Christensen, "The Contemporary Security Dilemma: Deterring a Taiwan Conflict," *The Washington Quarterly* 25, no. 4 (December 1, 2002): 5–21; Philip Yang, "Doubly Dualistic Dilemma: US Strategies towards China and Taiwan," *International Relations of the Asia-Pacific* 6, no. 2 (2006): 209–225.

96) Ienaga Masaki, "Chugoku ga gekido suru Taiwan soto no enzetsu wa honto ni chohatsuteki ka" [Is the Taiwanese President's speech that enraged China truly provocative?], Toyo Keizai, October 24, 2024.

potential reputational costs the United States would bear toward its allies, even some limited nuclear options will not necessarily give China a unilateral advantage in the contest of resolve. In terms of the balance of conventional forces, it is likely difficult both for China to quickly seize control of Taiwan and for Taiwan to sustain long-term resistance on its own. That leaves much room for an external intervention to make a difference. Additionally, the level of threat that U.S. intervention would pose to mainland China is relatively limited, which means China's desperate gambling on nuclear use would not be as credible as Russia's. Finally, if indirect assistance for Taiwan as an alternative policy option proves infeasible, the incentive for the United States to intervene directly would increase correspondingly. Thus, the window of opportunity for China to pursue changes to the status quo behind the nuclear shield is not necessarily greater than that of Russia in Ukraine.

Conclusion

As this chapter has shown, the effectiveness of the nuclear shield used by the revisionists to deter external intervention varies between the Russo-Ukrainian War and a Taiwan contingency. The comparison is summarized in Table 4.2.

There are significant differences in the balance of nuclear forces between the United States and Russia and between the United States and China. The Russian nuclear forces are on par with, or even partially superior to, those of the United States, and Russia has adopted a strategy that amplifies the risk of nuclear escalation should NATO directly intervene in the Russo-Ukrainian War. By contrast, the United States enjoys nuclear superiority over China. Resorting to a first use—even with tactical nuclear weapons to signal resolve—would be an extremely risky option for China. The United States is also not in a position to easily make concessions given the significant reputational costs, which are expected to negatively impact its security commitments to other regional countries. In this regard, the conditions are not in place for China to gain a unilateral advantage through nuclear threats.

As for the balance of conventional forces, the two conflicts share some common characteristics: while establishing a fait accompli through a short war is difficult, it is also hard for the victim state to sustain resistance on its own over an extended period of time. In such a scenario, there is much

potential for external actors to consider direct intervention. However, there are considerable differences between the two conflict scenarios when we consider how a U.S.-led direct intervention would affect the balance of power. Russia faces a clear conventional inferiority against NATO, which enhances the credibility of its threat to resort to nuclear use under duress. In contrast, China has built up assets to deny U.S. power projection in the Western Pacific. Compared to the Russian case, a U.S. intervention is less likely to make the situation desperate enough for China to make a credible nuclear threat.

The last variable, sustainability of indirect assistance, also highlights significant differences. In the Russo-Ukrainian War, NATO countries have been able to use overland routes to provide stable assistance to Ukraine. Indirect assistance has been an effective policy instrument to sustain Ukraine's resistance, short of direct intervention that is expected to be enormously costly. By contrast, in a Taiwan contingency, keeping Taiwan supplied by sea and air will be difficult. The likely blockade scenario would force any external actor(s) to accept the risk of confrontation with the PLA if they were to make attempts at providing such support to Taiwan.

Overall, the comparative analysis suggests that the risk of nuclear escalation is lower in a Taiwan contingency than in the Russo-Ukrainian War, and that indirect assistance will be far more challenging with regard to Taiwan than to Ukraine. These factors will increase the incentive for direct intervention. Although the implications of China's nuclear buildup are the subject of intense debate, the analysis in this chapter suggests that such buildup does not necessarily lead to the immediate manifestation of the stability-instability paradox, nor does it drastically widen the window of opportunity for China to change the status quo behind the nuclear shield. After all, discussions about nuclear forces in isolation are pointless. We cannot properly understand the effects of the stability-instability paradox without a holistic view of the escalation ladder, from proxy war through indirect assistance, to conventional war and nuclear escalation. China's evolving nuclear posture must be closely monitored, needless to say, but its nuclear shield may prove to be "a paper tiger" in contrast to Russia's nuclear threats in the Russo-Ukrainian War.

Table 4.2. The effectiveness of the nuclear shield in the Russo-Ukrainian War and a Taiwan contingency

	Russo-Ukrainian War	Taiwan contingency
Balance of nuclear forces	Russia = United States (Russia has a marginal advantage in tactical nuclear weapons)	China < United States (May change in the future)
Balance of conventional forces	Russia > Ukraine (Russia fails to achieve a quick fait accompli but has an advantage in attritional warfare) Russia < United States (NATO has the clear advantage)	China > Taiwan (China will likely struggle to achieve a quick fait accompli but will have an advantage in a long war) China = United States (Mutual denial of power projection is likely)
Sustainability of indirect assistance	Stable assistance is possible	Stable assistance is difficult
Effectiveness of the nuclear shield (Relative likelihood of foreign intervention)	High (Low)	Low (High)

Source: Prepared by the author.

Lastly, strategic coordination between China and Russia merits a brief mention. China's buildup of nuclear forces has fueled a debate on the "three nuclear superpowers" problem where the United States faces two peers simultaneously. This "two peers" dynamic raises significant concerns about the stability of arms race in peacetime.[97] As Andrew Krepinevich predicts: "With three competing great nuclear powers, many of the features that enhanced stability in the [Cold War] bipolar system will be rendered either moot or far less reliable."[98]

The three nuclear superpowers problem also has the potential to complicate the bargaining dynamics in crises, such as a Taiwan contingency. In an uncertain strategic environment, we need to consider both the "most likely scenario" and the "worst-case scenario." The tripolar nuclear world presents a new worst-case scenario in which China and Russia collude to attack the United States. It is generally accepted in International Relations that a tripolar system is prone to instability because it incentivizes two of the

97) Lynn Rusten and Mark Melamed, "The Three-Competitor Future: U.S. Arms Control with Russia and China," *Arms Control Today* 53, no. 2 (March 2023).

98) Andrew F. Krepinevich, Jr., "The New Nuclear Age," *Foreign Affairs* 101, no. 3 (April 19, 2022): 92–104, 92.

three powers to gang up on the third.[99] In crude terms, even if the United States were to "win" a nuclear exchange with China, the United States would exhaust much of its strategic assets in the process and leave itself vulnerable to Russia's nuclear forces. Moreover, if the United States were to acquire capabilities that match the combined forces of China and Russia, this would prompt the two to further expand their own arsenals. In short, the tripolar system could undermine both arms race stability and crisis stability.

However, it is worth pointing out that the strategic partnership between China and Russia, at its core, is a hedge against the United States. Their partnership falls short of a true marriage because the actual revisionist agendas of China and Russia do not overlap. Some have re-evaluated the durability of the Sino-Russian strategic partnership as a sign of a deeper relationship that goes beyond a "marriage of convenience."[100] As long as the United States has adversarial relations with both China and Russia and is more powerful than each of them individually, it is no surprise to see continued cooperation between China and Russia. Yet, what matters is how the two might collude to actively change the status quo. Throughout the Russo-Ukrainian War, Beijing has provided some diplomatic and economic support to Russia, but still maintained a certain distance with Moscow. That Russia is receiving munitions and other supplies from Iran and North Korea rather than China is telling. While this is partly due to the Western pressure aimed at reining in China's involvement, there are also more fundamental reasons. At the risk of stating the obvious, Ukraine is not at all a core interest for China, just as Taiwan is not for Russia. Where there is no vital interest at stake, there will be no credible nuclear threat. It is not difficult to imagine that Russia might offer diplomatic gestures to China during a Taiwan

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99) The view originates from a theoretical concern over the instability of a tripolar system compared to the stable bipolar system during the Cold War. However, the outcomes can vary depending on the foreign policy preferences of each power. Kenneth N. Waltz, *Theory of International Politics* (New York, NY: McGraw-Hill, 1979); Randall L. Schweller, "Bandwagoning for Profit: Bringing the Revisionist State Back In," *International Security* 19, no. 1 (1994): 72–107; Randall L. Schweller, *Deadly Imbalances: Tripolarity and Hitler's Strategy of World Conquest* (New York, NY: Columbia University Press, 1998).

100) Alexander Gabuev, "Putin and Xi's Unholy Alliance: Why the West Won't Be Able to Drive a Wedge Between Russia and China," *Foreign Affairs*, April 9, 2024; "The Xi-Putin Partnership Is Not a Marriage of Convenience: It Is One of Vital, Long-term Necessity," *Economist*, May 14, 2024; Oriana Skylar Mastro, "China's Agents of Chaos: The Military Logic of Beijing's Growing Partnerships," *Foreign Affairs* 103, no. 6 (October 2024): 26–32.

contingency, but any nuclear threats made by Russia in that context would have no credibility. It is also questionable if Russia would be willing or able to provide any meaningful military assistance to China. In short, while three nuclear superpowers may exist in the world, this does not mean that all three will be simultaneously involved in a single dispute as a matter of core national interest.

The most probable risk is Russia taking advantage of a Taiwan contingency to pursue opportunistic aggression in Europe again. However, given the limits of the Russian military's offensive capabilities revealed by the Russo-Ukrainian War, it seems unlikely that Russia will be in a position to threaten NATO head-on in the near future. Moreover, if two of the three nuclear superpowers were to enter a nuclear war, the remaining power would stand to reap the benefits by doing nothing. This dynamic could offer a disincentive for rash nuclear use and thus contribute to crisis stability. To conclude, the "worst-case scenario" arising from the three nuclear superpowers problem poses a theoretical conundrum that must be explored. However, how likely it is in the foreseeable future remains an entirely separate issue.