

Ukraine-Russia War and a Nuclear Crisis: How Dangerous It Could Be?

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Abstract

One of the most worrisome aspects of the current war on Ukraine is its possibility of escalating to a nuclear level. How likely is Moscow to employ nuclear weapons in the conflict? Is this crisis more or less likely to get worse than other nuclear crises? I try to find out some answers by looking at specific characteristics of the ongoing nuclear crisis. The paper begins with a basic framework of the nuclear crisis developed by Bell and Macdonald. Then I delve into the development and evolution of Russia's nuclear strategy. By applying Bell and Macdonald's theoretical framework to the ongoing nuclear crisis, I cautiously conclude that the current crisis is closer to the staircase model, where a nuclear first use incentive is moderate to relatively high, and crisis controllability is high. Therefore, the possibility of the current crisis escalating to a nuclear level may not be so high. There is certainly a risk of analyzing an ongoing crisis, and future research needs to address theoretical and practical shortcomings.

Keywords: *Ukraine-Russia War, Nuclear Crisis, Four Models of Nuclear Crises, First Use Incentive and Crisis Controllability, Russian Nuclear Strategy*

Introduction

Russia's unprovoked invasion of Ukraine on February 24, 2022, shocked the world and violently shook the existing international order. Despite repeated warnings from the Russian President Putin and the mobilization of large-scale forces near the border with Ukraine, not many had thought that Putin would actually order his army to cross the international boundary and brazenly attack the neighboring sovereign state in 2022 in Europe. In contrast to Moscow's expectation of early and easy victory, the war has been dragging on for more than two months as of May due to overconfidence and poor logistics of the Russian side as well as the tenacious resistance of Ukraine. Besides the horrendous human toll, one of the most worrisome aspects of the current war in Ukraine is its possibility of escalating to a nuclear level. In his speech justifying the war, Putin ominously stated that potential interveners would confront consequences that they had never seen in history, which is widely interpreted as a nuclear warning. A few days after the outbreak of war, Putin put Russia's nuclear forces on a higher state of alert. In mid-March, as the war continued and became messier, the UN General Secretary Guterres warned of the possibility of nuclear conflict. As many experts are concerned about the rising possibility of nuclear weapon use by Russia, Dmitry Medvedev, the former Russian president and the current deputy chairman of the country's security council, warned that Russia has the right to use nuclear weapons when its very existence is in jeopardy even by just conventional forces in late March.¹⁾ In mid-April, CIA Director William Burns made a statement that although there has been no actual deployment yet, the possibility of Russian military using tactical or low-yield nuclear weapons out of frustration and desperation should not be taken lightly.²⁾

Therefore, the ongoing war on Ukraine certainly contains nuclear risk and the crisis could get worse for various reasons. How likely is Moscow to employ nuclear

1) Daniel Boffey, "Russia reasserts right to use nuclear weapons in Ukraine," *The Guardian*, March 26, 2022.

2) William Burns, "The Role of Intelligence at a Transformational Moment" Speech delivered at Georgia Tech, April 14, 2022.

weapons in the conflict? Is this crisis more or less likely to get worse than other nuclear crises? What can the West possibly do to prevent it? What would be the consequences if Russia uses the bomb regardless of the size of yields? The paper tries to find out some answers to these questions. Since the conflict is still going on, it would be extremely hard to come up with satisfactory answers. I will try to find out as convincing answers as possible by looking at specific characteristics of the ongoing nuclear crisis. To get there, one needs to understand Russia's nuclear posture and strategy. Thus, the paper begins with a basic framework of nuclear crises to situate the current crisis in the proper context. Then I delve into the development and evolution of Russia's nuclear strategy. A cautious prospect of nuclear weapon use will follow. I conclude the paper by wrapping up the findings and providing some policy implications.

Analyzing Nuclear Crisis

Ever since the detonation of the first (and last so far) atomic bombs in 1945, the world has been spared a nuclear catastrophe. Yet there have been numerous near misses due to technical malfunctions, human errors, misperceptions, and/or crises between nuclear powers. Among the reasons that could have triggered nuclear use in the past, nuclear crises are particularly worrisome because involved parties are already locked in rivalry and animosity that could flare up at any time. Nuclear states have acquired nuclear weapons for mainly security reasons. They believe nuclear capability would significantly bolster their security by providing top-level deterrence from external threats. Since the precarious external security environment pressures nuclear-powered states to get the atomic weapons in the first place, it is not surprising that these states get involved in rivalry, tension, and confrontation with adversarial states even after they become nuclear powers. Any type of security crisis between nuclear states carries a risk of escalating to a nuclear exchange level. We might have been lucky to avoid a nuclear cataclysm between nuclear powers: a nuclear crisis has not escalated to the next level yet. However, as the current Ukraine War demonstrates, the possibility of nuclear escalation and breaching of nuclear threshold is always present in a crisis between nuclear powers. Are certain types of nuclear crises more prone to escalation? How do we know if a nuclear crisis gets out of control? What is required to prevent the danger from happening? To answer these questions, defining what a nuclear crisis is and figuring out nuclear crisis dynamics are in order.

Any type of military confrontation between nuclear powers, a typical appearance of a nuclear crisis, has the potential to move up to the next level. Bell and Macdonald define a nuclear crisis as "an interaction between two nuclear armed states in which there is a change in type and/or an increase in intensity of disruptive or hostile

behaviors with a heightened probability of military hostilities that destabilizes their relationship and begins with a disruptive act or event.”³⁾ By reflecting and simplifying this sophisticated definition, in this study, I define a nuclear crisis as a hostile interaction between nuclear armed states in which there is a heightened chance of escalating to a more disruptive level of nuclear use. Scholars also analyze the causes, processes, and consequences of a nuclear crises. Some of the narrow escapes like the Cuban Missile Crisis in 1962, the Able Archer in 1983, and the Kargil War in 1999 have attracted particular attention.⁴⁾ Other lesser-known nuclear crises also have been studied to find out a specific mechanism of the nuclear crisis and to learn the right lessons not to repeat the nuclear scare.⁵⁾ Despite efforts by many scholars, it is hard to find what role nuclear weapons played in each crisis and if they assuaged or worsened the crisis. Since states that were engaged in nuclear crises had strategic objectives in mind, researchers also have studied under what conditions a state would have the upper hand in the aftermath of a nuclear crisis but with no clear consensus. Whereas some argue that superior nuclear capability vis-à-vis its opponent gives a strong advantage to the state,⁶⁾ some argue that the balance of nuclear capability has little discernable effect on nuclear coercion.⁷⁾ Some argue that besides the balance of nuclear power, the balance of resolve between confronting states also matters in a nuclear crisis.⁸⁾ Therefore, various, sometimes

3) Mark Bell and Julia Macdonald, “How to Think about Nuclear Crises,” *Texas National Security Review*, Vol. 2, No. 2 (February 2019), p. 42.

4) Marc Trachtenberg, “The Influence of Nuclear Weapons in the Cuban Missile Crisis,” *International Security*, Vol. 10, No. 1 (Summer 1985); Dmitry Adamsky, “The 1983 Nuclear Crisis – Lessons for Deterrence Theory and Practice,” *Journal of Strategic Studies*, Vol. 36, No. 1 (2013); T. Negeen Pegahi, “From Kargil to Pulwama: How Nuclear Crises Have Changed over 20 Years,” *The Washington Quarterly*, Vol. 42, No. 2 (June 2019); Mark Bell and Julia Macdonald, “How Dangerous Was Kargil War?: Nuclear Crises in Comparative Perspective,” *The Washington Quarterly*, Vol. 42, No. 2 (June, 2019); Sameer P. Lalwani, et al., “From Kargil to Balakot: Southern Asian Crisis Dynamics and Future Trajectories,” Stimson Center Asia Policy Paper, Feb 2020.

5) Michael Gerson, “The Sino-Soviet Border Conflict: Deterrence, Escalation, and the Threat of Nuclear War in 1969,” Center for Naval Analyses (CNA), November 2010; Barry Blechman and Douglas Hart, “15. Nuclear Weapons and the 1973 Middle East Crisis,” in Robert Art and Kenneth Waltz, eds., *The Use of Force: Military Power and International Politics* (Rowman & Littlefield, 1999, 5th edition); Polly Nayak and Michael Krepon, “US Crisis Management in South Asia’s Twin Peaks Crisis,” Stimson Report 57 (September 2014, 2nd edition); Polly Nayak and Michael Krepon. “The Unfinished Crisis: The Crisis Management after the 2008 Mumbai Attacks,” Stimson, February 2012.

6) Matthew Kroenig, *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters* (Oxford University Press, 2018).

7) Todd Sechser and Matthew Fuhrmann, *Nuclear Weapons and Coercive Diplomacy* (Cambridge University Press, 2017).

8) Robert Powell, “Nuclear Brinkmanship, Limited War, and Military Power,” *International Organization*, Vol. 69 (Summer 2015).

opposite, interpretations and arguments have been put forward by academics in the nuclear field. Recently, Bell and Macdonald have attempted to synthesize existing arguments and concepts regarding the nuclear crisis and to provide a comprehensive and generalizable dynamic of nuclear crises. According to them, the intensity and direction of a nuclear crisis are based on the dynamic interactions of two key variables. The first variable is the extent to which either side has incentives to use nuclear weapons first in a crisis, a.k.a. crisis (in)stability, and the second variable is whether a crisis can escalate to the nuclear threshold in a controlled manner. The interaction of these two variables, the nuclear first use incentive and the controllability of crisis, yields four ideal-type models. The table below shows four models of nuclear crises.⁹⁾

<Table 1> Nuclear Crisis Model

Crisis Controllability			
		Low	High
Incentives for deliberate first use	High	“Firestorm” crisis	“Staircase” crisis
	Low	“Brinkmanship” crisis	“Stability-Instability” crisis

Among these four ideal models, a ‘stability-instability crisis, where an incentive for nuclear first use is low and crisis controllability is high, is the least dangerous model; a good example would be the Doklam Crisis, the months-long standoff between India and China along the disputed border areas near Bhutan in 2017. The ‘firestorm crisis model,’ where high incentives for nuclear first use coincide with low levels of controllability, is the most dangerous type and a potential nuclear crisis between North Korea and the US fits this model. According to Bell and Macdonald, the well-known Cuban Missile Crisis is a typical example of the ‘brinkmanship crisis’ because, during the Crisis, both sides had little incentive to go first while it was very difficult to control the possible escalation of the situation. The fourth model, the ‘staircase crisis’ occurs when one or both sides have a high incentive for nuclear first use, but the escalation controllability is relatively easy like what happened during the Kargil War between India and Pakistan in 1999.¹⁰⁾

Then, which nuclear crisis model best explains the current crisis over Ukraine? In

9) Bell and Macdonald, “How to Think about Nuclear Crises,” p. 46.

10) Ibid., pp. 47-62.

order to find an answer to this question, one needs to figure out how to measure these two intermingling variables of incentives for nuclear first use and crisis controllability. Bell and Macdonald lay out an elaborate measurement mechanism for two interacting variables. For incentives to use nuclear first use variable, they suggest three areas to look at: a significant nuclear asymmetry between the parties involved; an asymmetric escalation posture on either side; and perceptions by leaders of political advantages associated with the first use. According to them, the nuclear asymmetry is more likely to lead to the nuclear first use incentive because the weaker side is under the “use it or lose it” pressure when confronted by a superior enemy and the stronger side gets a “splendid first strike” temptation. A country with an asymmetric escalation posture, the concept developed by Vipin Narang,¹¹⁾ threatens the early use of nuclear weapons to deter a conventionally greater adversary. Leaders’ perception regarding their assessment of nuclear first use advantage is also important for first use incentive variable but hard to measure, as the authors admit.¹²⁾

For crisis controllability variable, Bell and Macdonald propose four areas to consider: robust command and control (C & C) institutions; clear and mutually understood red lines; the likelihood of interaction of nuclear and conventional forces; and avenues for crisis communication.¹³⁾ Although robust C & C, mutually clear red lines, and avenues for crisis communication like hotlines certainly make sense for crisis controllability, an interaction of nuclear and conventional forces might be tricky, because many nuclear states think this approach is a better way of deterrence despite increasing criticism to it.¹⁴⁾

These two interacting variables and seven areas to measure the two variables, three and four respectively, proposed by Bell and Macdonald, undoubtedly help understand nuclear crisis dynamics. However, there are clear limitations to this approach. As the authors admit, there could be more variables than the two, and we always have shortcomings in understanding leaders’ perceptions and misperceptions on the matters.¹⁵⁾ Furthermore, some argue that escalation controllability is just a myth, and nuclear calamity avoidance so far has been only thanks to sheer luck.¹⁶⁾ In

11) Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton University Press, 2014), pp. 19-21.

12) Bell and Macdonald, “How to Think about Nuclear Crises,” pp. 43-45.

13) *Ibid.*, p. 45.

14) James Acton, “Escalation through Entanglement: How the Vulnerability of Command-and-Control Systems Raise the Risks of an Inadvertent Nuclear War,” *International Security*, Vol. 43, No. 1 (Summer 2018); James Acton, ed., “Russian and Chinese Perspectives in Non-Nuclear Weapons and Nuclear Risks,” Carnegie Endowment for International Peace, 2017.

15) Bell and Macdonald, “How to Think about Nuclear Crises,” pp. 46-47.

16) Benoit Pelopidas, “The Unbearable Lightness of Luck: Three Sources of Overconfidence in the Manageability of Nuclear Crises,” *European Journal of International Security*, Vol. 2, No. 2 (2017).

spite of limitations and shortcomings, the interaction of two variables and the four ideal nuclear crisis models provide valuable insight and a useful analytical framework. Therefore, I apply this analytical framework to the current nuclear crisis in Ukraine to see how dangerous the crisis could be. Before I get to the recent nuclear thinking of Russian leaders, I provide a brief historical background of the evolution of Russian nuclear strategy to grasp better how it has reached the current stage of its nuclear mindset.

The Evolution of Russian Nuclear Strategy

When the US dropped the first atomic bomb on Hiroshima in August 1945, Stalin instantly realized the enormous military value of the new weapon. Since allowing an American nuclear monopoly would be severely detrimental to Soviet strategic interests around the world, Stalin immediately ordered to build the bomb as soon as possible. Thus, although it was imperative to recover the country devastated by the Nazi war machine, nuclear development became the top priority of the Soviet Union.¹⁷⁾ Moscow's sprint to acquire nuclear capability bore the fruit sooner than anticipated; in 1949, Moscow was able to break the American nuclear monopoly and became the second nuclear power.¹⁸⁾ After the humiliating retreat at the Cuban Missile Crisis in 1962 partially due to nuclear inferiority vis-à-vis the US, Moscow tried to expand and strengthen its nuclear arsenal to match that of Washington. After reaching nuclear parity with the US in the mid-1970s, the Soviet Union accelerated further to take a superior position over the US in the nuclear field. Even when they achieved a higher ground than the US in terms of nuclear capability in the early 1980s, the Soviet leaders were not satisfied with their security environment and worried about the possibility of America's first strike. Therefore, they continued to upgrade their strategic capability to bolster deterrence as well as to enhance damage limitation and counterforce ability.¹⁹⁾

The sudden disintegration of the mighty Soviet Union in late 1991 dramatically weakened the Russian military posture and degraded its status in international

17) Alexander Debs and Nuno Monteiro, *Nuclear Politics: The Strategic Causes of Proliferation* (Cambridge University Press, 2017), pp. 116-125.

18) Vipin Narang, *Seeking the Bomb: Strategies of Nuclear Proliferation* (Princeton University Press, 2022), pp. 131-142.

19) Reagan's Strategic Defense Initiative (SDI) further fueled this anxiety in Kremlin. John Hines, Ellis Mishulovich, and John Shull, "Soviet Intentions 1965-1985 Volume I: An Analytical Comparison of US-Soviet Assessments During the Cold War," Office of the Secretary of Defense (December 22, 1995), pp. 12-21; William Burr and Svetlana Savranskaya, eds., "Previously Classified Interviews with Former Soviet Officials Reveal U.S. Strategic Intelligence Failure Over Decades" *The Nuclear Vault* in the National Security Archive at <https://nsarchive2.gwu.edu/nukevault/ebb285/index.htm> (accessed on April 25, 2022).

politics. Russian leaders were then appalled by the splendid display of American conventional capability in the Gulf War and the war in former Yugoslavia. Russia's unstable political situation and dreadful economic condition during the transition period in the 1990s did not allow Moscow to maintain its conventional military power not to mention developing it to the American level. Hence, Moscow had no other choice but to rely on the nuclear capability to withstand the West's vastly superior conventional capability. When Russia was engaged in the bloody and messy war in Chechnya to prevent Grozny's secession attempt, NATO fighter bombers started striking targets in Serbia to coerce Belgrade's withdrawal from Kosovo. Leaders in Kremlin were deeply concerned that NATO intervention in Kosovo could expand to Chechnya. Thus, when Moscow announced a new nuclear doctrine in 2000, it mentioned the possibility of using limited nuclear strikes in the early period of conflict to deescalate against a conventionally superior adversary.²⁰⁾ This position of possible early use of nuclear weapons continued throughout the 2000s since Russia could not catch up with NATO's conventional capability. The unilateral withdrawal of the US from the ABM Treaty in 2002 and ensuing efforts of upgrading missile defense ability provoked Russia's angry response. The disappointing performance of the Russian military in the Georgia campaign in 2008 confirmed that there was still a lot of work to do to improve Russia's conventional capability. It also meant that nuclear weapons still should play an important role to compensate and buttress not-so-impressive conventional forces. A new nuclear doctrine published in 2010 included a statement that emphasized the role of nuclear weapons in limited use for de-escalation purposes, and the Russian military's exercise in this period always incorporated a simulation of a nuclear use.²¹⁾

Since 2010, the Russian military has developed the 'strategic deterrence' concept, which comprised wider and more comprehensive contents than those of the western counterpart. Russia's strategic deterrence roughly meant a system that encompassed military and non-military (political, diplomatic, legal, economic, science-technological, etc.) means to deter an adversary's military action by threatening strategic damage. The objective of strategic deterrence included a notion that Russia could employ strategic or nonstrategic nuclear weapons to deescalate to condition favorable to Russia or terminate the conflict.²²⁾ Russian strategists thought that Russia's threat to use nuclear weapons alone, although limited, in a conventional

20) Nikolai Sokov, "Evolution in Nuclear Strategy in US and Russia and Its Implications for Arms Control," Proliferation Papers at Ifri, Spring 2003.

21) Nikolai Sokov, "Russian military doctrine calls a limited nuclear strike "de-escalation." Here's why," *The Bulletin of Atomic Scientists*, March 8, 2022.

22) Kristin Ven Bruusgaard, "Russian Strategic Deterrence," *Survival*, Vol. 58, No. 4 (July 2016), pp. 7-14; Michael Kofman, Anya Fink, and Jeffrey Edmonds, "Russian Strategy for Escalation Management: Evolution of Key Concepts." CNA Research Memorandum (April 2020), pp. 5-12.

conflict would not be taken credibly. Therefore, they wanted to resolve the credibility problem by reinforcing conventional capability. Despite dismal performance in the war with Georgia in 2008, Russia saw its conventional capability was improving and this change was incorporated in a new doctrine and strategy published in 2010.²³⁾

Russia's blatant annexation of Crimea and provocative support of separatist insurrection in Eastern Ukraine raised an alarm regarding Putin's belligerent behavior and threatened the stability of Eastern Europe. Washington and NATO were helplessly watching Moscow destroying the agreements of the Budapest Memorandum, which guaranteed Ukraine's sovereignty and territorial integrity.²⁴⁾ This bellicosity also generated a hot debate in the West on the role of nuclear capability behind Moscow's aggression. Western scholars and policymakers already acknowledged Russia's aggressive nuclear strategy that seemed to significantly lower the threshold of nuclear use although limited and low-yield. Trump Administration's Nuclear Posture Review (NPR) published in 2018 reflected this

23) Kristin Ven Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority," *Journal of Strategic Studies*, Vol. 44, No. 1 (October 2021), pp. 22-27.

24) When the Soviet Union disintegrated in December 1991, Ukraine, Kazakhstan, and Belarus inherited the substantial number of nuclear weapons from the former Soviet Union. In the newly independent Ukrainian territory, the number of nuclear weapons was almost 2,000, which made Ukraine No. 3 nuclear power in the world at the time. The Budapest Memorandum was signed by the three former Soviet states as well as the US, Russia, and the UK in 1994. The memorandum ensured that three states would abandon nuclear weapons on their soil and become new members of the NPT as non-nuclear states. In return, the three already established nuclear powers guaranteed sovereignty and territorial integrity of the states that just gave up nuclear weapons as well as provided economic assistance for transition and economic development. The forceful annexation of Crimea in 2014 and the invasion of Ukraine in 2022 by one of the signees of the Memorandum caused uproar and fury among Ukrainians. Many in Ukraine and the West deplore that if Ukraine had not given up the nuclear weapons on their soil, they would have deterred the Russian invasion. Although the despair and betrayal felt by Ukrainians are completely understandable, it would have been nearly impossible for them to retain their nuclear weapons in the 1990s. First, Ukraine never "possessed" the nuclear weapons, since they never had operational control of the weapons, which were firmly under Moscow's hands. Ukraine desperately needed economic assistance and diplomatic recognition as a newly independent nation with a dreadful economic condition. If they had not given up the nuclear weapons, their economy would have remained woeful and they would have fallen into an international pariah. The US, which was ardently promoting non-proliferation agenda with bipartisan support in the post-Cold War era, would have never allowed another dangerous precedent of nuclear proliferation. Furthermore, even though Ukraine somehow had obtained some nuclear weapons, it might not have been able to stop Russia's calculated aggression. Many argue that a Russian invasion could have occurred much sooner. William Martel, "7. Why Ukraine Gave Up Nuclear Weapons: Nonproliferation Incentives and Disincentives," in Barry Schneider and William Dowdy, Eds., *Pulling Back from the Nuclear Brink: Reducing and Counteracting Nuclear Threats* (Routledge, 1998); Mariana Budieryn, "Was Ukraine Wrong to Give Up Its Nukes?" *Foreign Affairs*, April 8, 2022; Michael Krepon, *Winning and Losing the Nuclear Peace: The Rise, Demise and Revival of Arms Control* (Princeton University Press, 2021), pp. 330-335.

concern. The NPR stipulates, “Russian strategy and doctrine emphasize the potential coercive and military uses of nuclear weapons. It mistakenly assesses that the threat of nuclear escalation or actual first use of nuclear weapons would serve to ‘de-escalate’ a conflict on terms favorable to Russia.....mistaken expectation that coercive nuclear threat or limited first use could paralyze the US and NATO.”²⁵⁾ Thus, by publishing an official nuclear document that contains the potential danger of Russia’s nuclear strategy, Washington made a stern warning that it would not fall for Moscow’s elaborate nuclear scheme. Furthermore, the Pentagon said it would develop and deploy new low-yield non-strategic weapons systems to enhance tailored and flexible nuclear deterrence against an adversary like Russia.

In 2020, the Kremlin published “Principles of State Policy of the Russian Federation in the Sphere of Nuclear Deterrence,” which laid out Russia’s nuclear policy and doctrine. The document clearly aimed to dispel suspicion about the allegedly aggressive Russia’s nuclear posture, known as “escalate to deescalate” in the West as repeatedly appeared in the 2018 NPR. In the document, Moscow constantly emphasized that the Russian nuclear strategy was designed for assured retaliation and its nuclear posture was of a defensive nature only. However, in the same document Russia specified four conditions under which Moscow would consider using nuclear weapons. That raised doubts in the West regarding the Russian nuclear strategy’s true nature. The first three conditions are related to nuclear weapons, including the enemy’s use of nuclear weapons and an attempt to undermine Russia’s nuclear retaliation. The fourth condition specifies, “aggression against the Russian Federation with the use of conventional weapons when the very existence of the state is in jeopardy.”²⁶⁾ Thus, Moscow states that an attack on Russia with conventional weapons could invoke a nuclear response dependent upon the scale and seriousness of the attack. In other words, Russia could justify nuclear use in response to western conventional aggression at the whim of the interpretation. The publication of the ‘Principles’ stirred fiercer debates in the West regarding Russia’s real nuclear doctrine and capability.²⁷⁾ The document’s ambiguous wordings and actual nuclear modernization efforts and deployment plans as well as high-ranking officials’ contradictory comments did not help alleviate western concerns and suspicion.²⁸⁾

25) US Department of Defense. “Nuclear Posture Review Report.” Office of the Secretary of Defense (February, 2018), pp. 8, 30.

26) Hans Kristensen and Matt Korda, “Russian Nuclear Weapons, 2022,” *Bulletin of the Atomic Scientists*, Vol. 78, No. 2 (2022), p. 101.

27) Cynthia Roberts, “Revelations about Russia’s Nuclear Deterrence Policy,” *War on the Rocks*, June 19, 2020; Petr Topychkanov, “Russia’s nuclear doctrine moves the focus from non-Western threats,” October 1, 2020 at <https://www.sipri.org/commentary/blog/2020/russias-nuclear-doctrine-moves-focus-non-western-threats> (accessed on April 5, 2022); Michael Kofman and Anya Loukianova Fink, “Escalation Management and Nuclear Employment in Russian Military Strategy,” *War on the Rocks*, June 23, 2020.

Moscow has been trying to develop an optimal way of successfully deterring conventionally superior foes in the post-Cold War period. Warning a limited use (or actual use) of nonstrategic nuclear weapons in the early stage of the conflict to deescalate seems to become a standard approach of the Russian military since around 2000. As Russia's conventional capability has improved, Moscow's heavy reliance on nuclear weapons has been reduced. Yet as the Russian term 'strategic deterrence' indicates, Moscow's strategic efforts to improve deterrence effects through skillfully calculating the level and method of warning or threat by incorporating conventional and nuclear capability have continued. Thus, Moscow has been sharpening Russian-style escalation management through fierce internal debates. Washington and NATO, however, interpret the Russian nuclear strategy as a ploy to make concessions from the West by threatening to lower the nuclear threshold and to risk a limited nuclear war. The west has been devising its response against Russia accordingly and this tit-for-tat confrontation has been raising tensions between the two sides that could be harmful to crisis stability.²⁹⁾ Under these circumstances, Russia blitzed Ukraine.

How Likely Is Moscow to Use Nuclear Weapons?

Putin has been arguing that Washington and Kyiv were trying to redeploy nuclear weapons on Ukrainian soil without providing any proof for quite some time.³⁰⁾ Right before the invasion, Putin warned against Ukraine's attempt to join NATO and NATO's eastern expansion as a grave encroachment on Russia's core security interests and used it as an excuse for possible nuclear deployment.³¹⁾ On the day of the invasion, Putin made a passionate speech that Russia's survival was in danger because of the West's diabolical effort to weaken Russia and invoked the possibility of nuclear use laid out in the 2020 nuclear document.³²⁾ A few days later Putin raised an alarming level of its nuclear forces. Thus, from the very beginning of the conflict, the Ukraine War has been conducted under a nuclear shadow.

It is hard to fathom how serious Putin is about actual nuclear use. Yet by applying

28) Kristensen and Korda, "Russian Nuclear Weapons, 2022," pp. 101-102.

29) Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority"; Kofman and Fink, "Escalation Management and Nuclear Employment in Russian Military Strategy; Sokov, "Russian Military Doctrine Calls a Limited Nuclear Strike "De-Escalation." Here's Why."

30) David Sanger, "Putin Spins a Conspiracy Theory That Ukraine Is on a Path to Nuclear Weapons," *New York Times*, February 23, 2022.

31) John Erath, "Hidden Dangers of the Ukraine Crisis," January 31, 2022 at <https://armscontrolcenter.org/hidden-dangers-of-the-ukraine-crisis> (accessed on February 2, 2022).

32) David Holloway, "Read the fine print: Russia's nuclear weapon use policy," March 10, 2022 at <https://thebulletin.org/2022/03/read-the-fine-print-russias-nuclear-weapon-use-policy> (accessed on March 11, 2022).

seven measurements that consist of the two variables suggested by Bell and Macdonald, we could have a better understanding of the level and degree of nuclear danger of the current crisis. The variable measuring the incentives of nuclear first use assesses whether there is a significant nuclear disparity between conflicting parties. The current conflict is mainly between Ukraine and Russia; yet, the nuclear dimension of the conflict is definitely between Russia and the US (and NATO), the two nuclear-powered adversaries. According to the Federation of American Scientists, Russia possesses 5,977 in its nuclear inventory, while the US has 5,428 as of February 2022. Among these, Moscow deploys 1,588 active nuclear weapons ready to launch, while Washington's active duty weapons number 1,644 following the New START Agreement.³³⁾ Thus, both maintain a robust nuclear triad and there seems to be no nuclear disparity between them.

Regarding the second criteria of the nuclear first use incentive variable, Moscow looks to be interested in a nuclear posture that looks like an 'asymmetric escalation.' Although official statements emphasize the assured retaliation role of its weapon systems, as described in the previous section, Russia has been trying to compensate for its conventional inferiority vis-à-vis the US by developing an aggressive nuclear strategy that utilizes the threat of early use or an actual limited use to deescalate. Yet this interpretation demands more detailed scrutiny of the evolution of Russia's official nuclear strategy. As Russia's unique version of the 'strategic deterrence' concept reveals, Moscow has developed an elaborate and detailed preparation for each stage in the spectrum between peace and nuclear war. More precisely, Russia has developed specific plans of escalation management for every eventuality. Thus, Russia has advanced conflict phases from peacetime where only potential danger lurks to large-scale war (even nuclear war). According to this framework, the current war on Ukraine belongs most likely to local war, which is defined as "war, in which limited political-military goals are pursued, military actions are conducted within the borders of combating states and which touches primarily on the interests (territorial, economic, political, and others) of just these states," and is located between a military threat and a regional war, which involves several states.³⁴⁾ As the figure below shows, Russian planners have differentiated the level and intensity of conflict into several stages and incorporated specific ways of conducting military or nonmilitary, strategic or nonstrategic means deployed differently in every phase.

33) Federation of American Scientists, "Status of World Nuclear Forces," at <https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/> (accessed on May 7, 2022).

34) Kofman, Fink, and Edmonds, "Russian Strategy for Escalation Management," p. 6.

<How Russia Manages Escalation>³⁵⁾

The local war phase is beyond the demonstration stage and in the realm of adequate damage infliction on the opponents. Most notably, the Russian authority could make a threat to use nuclear weapons along with inflicting damage through precision conventional capability while avoiding the enemy's nuclear targets. In the next phase of the regional war, "single and/or grouped use of nonstrategic nuclear weapons on adversary forces" could be conducted. Thus, it is not surprising that Putin and others have been making raucous warnings of nuclear use in this local war phase without seriously considering it. Furthermore, according to Bruusgaard, "Russian strategists never argued that Russia should employ nuclear de-escalation in limited wars that were about limited objectives."³⁶⁾ Of course, however, since there is no clear demarcation line between local war and regional war phases and the distinction could be a matter of interpretation of the Kremlin leadership, the situation (or how to assess the military situation) could get worse at

35) Ibid., p. 20.

36) Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority" p. 7.

any time. Moreover, as seen in the previous section, Russia's officially documented statements on nuclear weapons do not always coincide with Moscow's actual force development and deployment. Therefore, I cautiously conclude that Russia's nuclear posture is moderately nuclear-first-use-prone.

Putin's perception of political advantages associated with nuclear first use is nearly impossible to comprehend. Although he has made comments numerous times concerning how serious he is about the nuclear option, his hands may not be completely free. Yet one should not forget that he is the one who ordered the full-scale invasion of a neighboring sovereign country despite all the odds against him. I might have to reserve judgment on this area due to the enormous difficulty of grasping the leader's perception on the matter. In sum, Russia enjoys parity with the US on nuclear weapons. Russia's nuclear posture looks like an asymmetric escalation posture but it is more complicated than how it looks; its nuclear posture may not be as dangerous as it appears. Putin's perception part remains void. Therefore, overall, on the variable of nuclear first use incentives, Russia seems to have a low-to-moderate incentive to use nuclear weapons first.

Moving onto the crisis controllability variable, first, Russia is believed to preserve robust Command and Control (C & C) system at its disposal. After all, Russia has been maintaining thousands of nuclear arsenals for decades without accidental or unauthorized detonation of any of them, which might have triggered a nuclear Armageddon, despite numerous small or big accidents and malfunctions in various facilities. The Soviet leadership kept a more centralized and strict C & C system than its American counterparts during the Cold War.³⁷⁾ Currently, the President of the Russian Federation has the sole authority over the decision to use nuclear weapons. Besides the president, the defense minister and the chairman of the Joint Chief of Staff jointly prepare the authorization to use nuclear weapons. To prepare for the absence of leadership, Moscow has devised the Perimeter system to make sure a retaliatory strike takes place.³⁸⁾ In general, the Russian nuclear C & C can be considered reliable and robust. Certainly, however, considering the extreme difficulty of weighing the sole authority's mindset as well as experiences of malfunction and various errors, the seemingly robust system cannot always guarantee the perfect performance.

Regarding the red lines, Putin has issued unambiguous warnings several times that the presence of NATO in Ukraine, especially the deployment of long-range missiles or missile defense systems, would surely cross the red line, and Moscow

37) Eric Schlosser, *Command and Control: Nuclear Weapons, the Damascus Accident, and the Illusion of Safety* (Penguin Books, 2013), pp. 467-469.

38) Jeffrey G. Lewis and Bruno Tertrais, "The Finger on the Button: The Authority to Use Nuclear Weapons in Nuclear-Armed States," CNS Occasional Paper #45, February 2019, pp. 10-12; Amy Woolf, "Russia's Nuclear Weapons: Doctrine, Forces, and Modernization," Congressional Research Service (CRS) Report, September 13, 2021, p. 19.

would respond accordingly.³⁹⁾ Even though Washington and other NATO member states have been actively supporting Ukraine by providing substantial military and economic assistance, they have been careful not to put their boots on Ukrainian soil. US President Biden has continually refused to establish a no-fly zone over the Ukrainian sky that would surely lead to direct military confrontation with Russian forces. In return, Moscow also abstains from expanding war beyond the borders of Ukraine despite repeated warnings of attacking supply routes of military equipment into Ukraine. It is because attacking convoys within Poland or any neighboring countries means attacking a NATO member state, which automatically invokes Article 5 of the collective defense mechanism.⁴⁰⁾ Thus, both sides seem to clearly understand the red lines drawn by the other side and not cross them in fear of escalation.

Russia has been investing heavily in its conventional capability since the threat of early nuclear use was not considered credible and to get out of its enduring inferior position vis-à-vis the US in the conventional forces. Recently, Russia became more confident in its conventional capability; consequently, its heightened nuclear threshold and reduced signaling of nuclear early use reflected this confidence.⁴¹⁾ Yet, the 2020 nuclear document still reaffirms the salience of the nuclear role when confronted with a grave conventional threat. The abysmal performance of Russian forces in the current war of 2022 also makes us think again about the true ability of Russian conventional forces. Regarding the potential danger of conventional military operations targeting forces related to nuclear operations, the risk is certainly present; yet, both sides seem to be making conscious efforts not to cross it.⁴²⁾ Thus, although the danger is lurking and the entanglement problem persists, the likelihood of interaction of nuclear and conventional forces that could lower crisis controllability does not look high.

Since the great scare of the Cuban Missile Crisis, the two sides have been keeping a hotline to reduce the possibility of misperception and misunderstanding. Even though it is hard to say that the crisis communication avenue has always worked smoothly between Washington and Moscow, it surely has helped to keep both sides in check. In mid-May, the US Secretary of Defense Lloyd Austin talked with his Russian counterpart on the phone for the first time since the invasion. The

39) "Russia will act if Nato countries cross Ukraine 'red lines', Putin says," *The Guardian*, November 30, 2021. Yet Putin invaded Ukraine anyway despite no deployment of NATO forces in Ukraine. Ukraine being a non-NATO member seems to influence heavily the decision-making process of the Kremlin.

40) Jeffrey Knopf, "Why the Ukraine War Does Not Mean More Countries Should Seek Nuclear Weapons" April 12, 2022 at <https://thebulletin.org/2022/04/why-the-ukraine-war-does-not-mean-more-countries-should-see-nuclear-weapons/> (accessed on April 30, 2022).

41) Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority" p. 26.

42) Kofman, Fink, and Edmonds, "Russian Strategy for Escalation Management," p. 20.

communication did not produce much, but keeping the communication line open would certainly be beneficial to the opposing parties to maintain conversation even in the worst time.⁴³⁾

Therefore, given the relatively robust level of crisis controllability and the moderate level of first strike incentive, Russia's position seems to be located somewhere between the stability-instability model and the staircase model, probably closer to the latter. It means the probability of the current crisis moving up to a dangerous level is not that high. Bell and Macdonald provide the Doklam Crisis in 2017 between India and China as an example of the stability-instability model. During the crisis, nothing much happened besides a weeks-long confrontation between the two sides.⁴⁴⁾ Thus, it may not be appropriate to compare the Doklam Crisis with the current crisis over Ukraine, where actual intense fighting caused thousands of casualties and massive material destruction. The Kargil War, as a good example of the staircase model, seems to fit better with the current nuclear crisis caused by Russia. According to the authors, the staircase model like the Kargil War emerges when vital national interests are at stake. During the Kargil War, the Pakistani side had the temptation of early nuclear use to achieve their revisionist objective of reclaiming the disputed Kashmir region; yet, they chose not to. Since the staircase crisis model develops gradually to the nuclear level after exhausting other options, the conventional balance of power is vitally important. When the Kargil War was progressing, Islamabad had an incentive for nuclear first use but conventional inferiority and strong outside intervention prevented it. India's robust C & C, Pakistan's easy-to-notice-red lines, the narrow geographic area that limited interaction between conventional and nuclear forces, and a hotline between the two states contributed to the crisis controllability during the crisis.⁴⁵⁾ Therefore, Pakistan's nuclear first use incentive never materialized. Among the four models, the staircase model seems to be the closest to the current war on Ukraine, and that outlook gives us a sigh of relief for the time being.

Conclusion

Russia's invasion of Ukraine not only has disrupted the existing international order and norms but also significantly raised the eerie prospect of a nuclear exchange. Trying to figure out how dangerous an ongoing crisis could be is extremely hard and risky since there are so many uncertainties. Yet, it is still a

43) Paul Shinkman, "U.S. Defense Secretary Speaks With Russian Counterpart as Putin Faces New Pressure," *USNews*, May 13, 2022.

44) Bell and Macdonald, "How to Think about Nuclear Crises," PP. 47-48, 60-61.

45) *Ibid.*, pp. 48-49, 50-54.

worthwhile effort to prepare for an unexpected turn of events and to learn the right lessons after the violent confrontation subsides. By adopting Bell and Macdonald's useful framework, I apply the two variables of nuclear first use incentive and crisis controllability to find out into which nuclear crisis model, among the four ideal models, the current crisis falls. It is hard to reach a satisfactory conclusion on the nuclear first use incentive variable because of the enormous difficulty of comprehending Russia's exact nuclear posture as well as Putin's perception of the issue. Nuclear parity between the US and Russia is clearly present though. Therefore, I cautiously conclude that Russia's incentive for nuclear first use is moderate. The crisis controllability seems relatively straightforward and not too difficult. Although there is always a risk of overlooking the true nature, four measurements – a robust C & C system, clear red lines, a low likelihood of interaction of nuclear and conventional forces, and existing communication avenues – all seem to buttress the crisis controllability of the current crisis. Therefore, the Ukraine crisis looks closest to the staircase model, which means the possibility of the crisis escalating to the nuclear use level is not very high.

There are many limitations to this research though, which require further investigation. First, the nuclear crisis that I try to examine is still ongoing. There is always a danger of analyzing an event that is not concluded yet due to uncertainty and unpredictability. Second, as Bell and Macdonald admit, it is hard to say that the two interacting variables and the seven measurements are exhaustive in this type of research and thus may not be enough. Third, even though the staircase model is relatively safer than some other models on the escalation scare, it certainly contains a not-so-negligible risk. For example, the Kargil War, a good example of the staircase model, was resolved in great part thanks to the US intervention. However, there is no such thing in the current crisis.⁴⁶⁾ Furthermore, witnessing the destruction of the Budapest Memorandum and the destruction of the country that signed and believed in it, North Korea might have learned a lesson that, for regime survival, nuclear weapons must be never given up under any circumstances. It would make denuclearization efforts much more difficult. Future research needs to address these shortcomings.

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46) Besides, another crisis that occurred in 2019 in South Asia, the Pulwama Crisis, was even more dangerous in terms of the risk of escalation. It indicates that the leaders of India and Pakistan may not have learned the right lessons from the 1999 War. Mark Bell and Julia Macdonald, "How Dangerous Was Kargil War? Nuclear Crises in Comparative Perspective," *The Washington Quarterly*, Vol. 42, No. 2 (2019).pp. 144-146.

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