

THE ROLE OF NON-STRATEGIC NUCLEAR WEAPONS
IN RUSSIAN DETERRENCE

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by

F.A.J.J. WINTERMANS, MAJOR, ROYAL NETHERLANDS ARMY
Bachelor of Science, Universiteit van Amsterdam, Amsterdam, Noord-Holland, 2006
Master of Arts, Nederlandse Defensie Academie, Breda, Brabant, 2015

Fort Leavenworth, Kansas
2022

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Name of Candidate: Frederik Wintermans

Thesis Title: The Role of Non-Strategic Nuclear Weapons in Russian Deterrence

Approved by:

_____, Thesis Committee Chair
David W. Christie, M.A.

_____, Member
G. Scott Gorman, Ph.D.

_____, Member
Daniel G. Cox, Ph.D.

Accepted this 10th day of June 2022 by:

_____, Assistant Dean of Academics for
Degree Programs and Research
Dale F. Spurlin, Ph.D.

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ABSTRACT

THE ROLE OF NON-STRATEGIC NUCLEAR WEAPONS IN RUSSIAN DETERRENCE, by Frederik Wintermans, 90 pages.

This thesis explores the role of non-strategic nuclear weapons (NSNWs) in Russian deterrence. The problem is that in 2022, there is insufficient understanding of Russian nuclear deterrence with Western policy and decision-makers. This thesis aims to increase understanding of the Russian employment of NSNWs. The literature review finds that Russian deterrence differs sharply from Western deterrence: Russian deterrence measures are more flexible and aim to restore equilibrium in the Russian relationship with the West. The analysis shows that the Kremlin employs NSNWs along the entire conflict spectrum, NSNWs have extensive doctrinal battlefield use, and the Russian General Staff integrates them within conventional Russian forces. Russian NSNWs negatively affect deterrence because their concepts for employment differ from the West's. A military conflict between nuclear powers with Western governments insufficiently understanding the role of NSNWs in Russian deterrence carries a significant risk of nuclear escalation.

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ACRONYMS

NATO North Atlantic Treaty Organization

NSNWs Non-strategic Nuclear Weapons

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CHAPTER 1

INTRODUCTION

Background

War appears to be, or threatens to be, not so much a contest of strength as one of endurance, nerve, obstinacy, and pain. It appears to be, and threatens to be, not so much a contest of military strength as a bargaining process—dirty, extortionate, and often quite reluctant bargaining on one side or both—nevertheless a bargaining process.

—Thomas Schelling, *Arms and Influence*, writing in 1966

In recent years academic attention to the changing nature of the security environment in Western Europe sharply increased. Most notably, the 2014 annexation of Crimea intensified some North Atlantic Treaty Organization (NATO) members' threat perception vis-a-vis Moscow. Additionally, Russian political and military leadership heavily invested in strengthening their armed forces by implementing a series of State Armaments Programmes over the past two decades. A key element of Russian military power comes from their nuclear arsenal, composed of strategic and non-strategic nuclear weapons (NSNW). NSNWs are low-yield nuclear weapons “by land, sea, or air forces against opposing forces, supporting installations, or facilities. Such forces may be employed, when authorized by competent authority, to support operations that contribute to the accomplishment of the commander’s mission within the theater of operations.”¹ Of this class of weaponry, Moscow possesses the largest amount of nuclear warheads and

¹ In literature, there is no agreement of what exactly constitutes a NSNW. This definition is derived from Chairman of the Joint Chiefs of Staff, Joint Publication 1-02, *Dictionary of Military and Associated Terms* (Washington, DC: Joint Chiefs of Staff, April 12, 2001, as amended through April 2010), 331, https://irp.fas.org/doddir/dod/jpl_02-april2010.pdf.

the most diverse delivery systems in the world. They have an estimated 1800 warheads and around 20 different delivery systems.² Among these latter are cruise and ballistic missiles, free-fall bombs, depth bombs, and air defense.³ A result of the State Armament Programme is the introduction within the Ground Forces of the 9M729 ground-launched cruise missile, known in NATO as the SSC-8 SCREWDRIVER.⁴ The 9M729 can be armed with a conventional and a nuclear warhead and has a range of approximately 2000 kilometers; it is the missile that caused the United States in 2019 to suspend its compliance with the Intermediate-range Nuclear Forces agreement.⁵

The Russian Armed Forces have the largest variety of delivery systems globally, yet they still developed the 9M729. This raises the question of why the Russian leadership decided on this ground-launched cruise missile. Part of the answer is its limited footprint on the battlefield and its mobility.⁶ The problematic element of these characteristics is that it destabilizes relationships when tensions rise because they are

² Hans M. Kristensen and Matt Korda, “Tactical Nuclear Weapons,” *Bulletin of the Atomic Scientists* 75, no. 5 (2019): 253, <https://www.tandfonline.com/doi/pdf/10.1080/00963402.2019.1654273?needAccess=true>.

³ *Ibid.*, 255.

⁴ Daniel Coats, “Director of National Intelligence Daniel Coats on Russia’s INF Treaty Violation,” Office of the Director of National Intelligence, November 30, 2018, <https://www.dni.gov/index.php/newsroom/speeches-interviews/item/1923-director-of-national-intelligence-daniel-coats-on-russia-s-inf-treaty-violation>.

⁵ C. Todd Lopez, “U.S. withdraws from Intermediate-Range Nuclear Forces Treaty,” U.S. Department of Defense, August 2, 2019, <https://www.defense.gov/News/News-Stories/Article/Article/1924779/us-withdraws-from-intermediate-range-nuclear-forces-treaty/>.

⁶ Missile Threat, “9M729,” Center for Strategic and International Studies, last updated March 31, 2022, <https://missilethreat.csis.org/missile/ssc-8-novator-9m729/>.

virtually impossible to locate and have short flight times, thus limiting warning time and pressuring decision-making. Another part of the answer to why Moscow developed the 9M729 is that it plays a vital role in Russian regional deterrence, adding flexibility to military response options when faced with rising tensions vis-à-vis NATO.

Problem Statement

The problem is that there is insufficient understanding of Russian nuclear deterrence with Western policy and decision-makers in the political and military domains.⁷ More problematic, on the specific topic of Russian NSNW, a topic Moscow arguably attaches more importance to than Western governments (*the West*), there is even less understanding. The academic assessment of this lack of knowledge varies from “Western leaders should understand that Russia has considerable capability to use its

⁷ See for example Nikolai Sokov, “Russia Clarifies its Nuclear Deterrence Policy,” (Vienna Center for Disarmament and non-Proliferation, Vienna, Austria, June 3, 2020): 1, https://vcdnp.org/wp-content/uploads/2020/06/UKaz-on-nuclear-deterrence_final.pdf; Dmitry Adamsky, “Deterrence a la Russe,” in *Netherlands Annual Review of Military Studies: Deterrence in the 21st Century—Insights from Theory and Practice*, ed. Frans Osinga and Tim Sweijts (New York: Springer, 2020): 170; Duncan Allen, Annette Bohr, Mathieu Boulegue, Keir Giles, Nigel Gould-Davies, Philip Hanson, John Lough, Orysia Lutsevych, Kate Mallinson, Anais Marin, James Nixey, Ben Noble, Nikolai Petrov, Ekaterina Schulmann, James Sherr, Kataryna Wolczuk, and Andrew Wood, *Myths and Misconceptions in the Debate on Russia: How They Affect Western Policy, and What Can Be Done* (London: Russia and Eurasia Programme, The Royal Institute of International Affairs, Chatham House, May 2021): 3, https://www.chathamhouse.org/sites/default/files/2021-05/2021-05-13-myths-misconceptions-debate-russia-nixey-et-al_0.pdf; Michael Kofman, Anya Fink, and Jeffrey Edmonds, “Russian Strategy for Escalation Management: Evolution of Key Concepts,” (CNA Research Memorandum, Center for Naval Analyses, Arlington, VA, April 2020): 1, https://www.cna.org/CNA_files/PDF/DRM-2019-U-022455-1Rev.pdf.

military forces – including its nuclear forces,” to the more pessimistic “the thinking behind [Western policies toward Russia] has often been unrealistic or simply flawed.”⁸

Purpose of the Study

Western allies must understand why NSNWs play an important role in Russian deterrence.⁹ This thesis aims to further the understanding of the Russian employment of NSNW. A better understanding decreases the chance of miscommunication and uncontrollable escalation during periods of increasing tensions beyond the point of no return.¹⁰ For deterrence to work and avoid military conflict, both parties must understand each other’s threat perception, vital security interests, escalation ladder, and, foremost, the significance of signaling during times of crisis.¹¹

Research Questions

The problem statement and the purpose of this thesis lead to the primary research question: How do differences in Russian and Western perceptions of the employment of NSNW affect deterrence?

Three secondary research questions support the primary question:

⁸ Allen, *Myths and Misconceptions*, 3.

⁹ Amy Woolf, *Nonstrategic Nuclear Weapons*, Congressional Research Service Report for Congress, RL32572 (Washington, DC: Library of Congress, last updated September 6, 2019), <https://crsreports.congress.gov/product/pdf/RL/RL32572/37>.

¹⁰ Samuel Charap, Elina Treyger, and Edward Geist, *Understanding Russia’s Intervention in Syria* (Santa Monica, CA: RAND Corporation, 2019), https://www.rand.org/pubs/research_reports/RR3180.html; Thomas Schelling “Nuclear Strategy in Europe.” *World Politics* 14, no. 3 (1962): 421.

¹¹ Adamsky, “Deterrence a la Russe,” 162.

1. Does the role of NSNW differ in utility along the conflict spectrum?
2. How does the application on the battlefield differ?
3. What are the differences between Russia and the West in nesting NSNWs in conventional forces?

Assumptions

Two basic assumptions underpin this thesis. The first is that any military conflict with the Russian Federation has a nuclear component. A nuclear component does not necessarily mean actual use; Moscow might show restraint by employing NSNWs to intimidate or demonstrate. It does mean that military planning vis-à-vis Moscow must consider the problem set introduced by NSNWs in its scenario. Additionally, should Article 5 be invoked, the threat of nuclear escalation will loom over the Western political decision-making process.¹²

The second assumption is that the Russian Federation employs NSNW based on a rational decision-making process, which follows a certain logic. This logic differs from Western logic because different values underpin it. Nevertheless, the process is rational from a Russian perspective, and understanding this perspective is critical to grasp its logic better.

¹² In Article 5 of the North Atlantic Treaty NATO members agree "...that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all...", North Atlantic Treaty Organization, The North Atlantic Treaty, last updated April 10, 2019, https://www.nato.int/cps/en/natolive/official_texts_17120.htm.

Definition of Terms

For reasons of coherence, the definitions of different types of deterrence used in this thesis are derivatives of Mazarr's definitions:

Deterrence. "The practice of discouraging or restraining someone—in world politics, usually a nation-state—from taking unwanted actions, such as an armed attack."¹³

Nuclear deterrence. "The practice of discouraging or restraining someone using nuclear capabilities—in world politics, usually a nation-state—from taking unwanted actions, such as an armed attack."¹⁴

Regional deterrence. "The practice of discouraging or restraining someone—in world politics, usually a nation-state—from taking unwanted actions, such as an armed attack" in a specific geographical region.¹⁵

Immediate deterrence. "Short-term, urgent attempts to prevent a specific, imminent attack, typically during a crisis."¹⁶

Non-strategic nuclear weapons. Low-yield "nuclear weapons by land, sea, or air forces against opposing forces, supporting installations or facilities, in support of operations that contribute to the accomplishment of a military mission of limited scope, or in support of the military commander's scheme of maneuver, usually limited to the

¹³ Michael J Mazarr, *Understanding Deterrence* (Santa Monica, CA: RAND Corporation, 2018), 2, <https://www.rand.org/pubs/perspectives/PE295.html>.

¹⁴ *Ibid.*, 2.

¹⁵ *Ibid.*, 2.

¹⁶ *Ibid.*, 4.

area of military operations.”¹⁷ Low-yield means a relatively small payload, ranging from 0.1 to about 20 kilotons. It is significantly smaller than the payload a strategic nuclear weapon can deliver.¹⁸

Scope

The research of this thesis adds to the general understanding of how the West deters Russia and vice versa from employing military power against the other. The scope of this general point of departure is threefold. First, this thesis focuses on NATO’s eastern flank, mainly on the Baltic Sea region. Russian and NATO’s collision of conflicting security interests is the most acute in this region: from a Russian perspective, adversaries surround the exclave Kaliningrad, NATO’s expansion in 2004 reached St. Petersburg, the second most important city in the Russian Federation, and NATO contests the control of shipping routes. Acknowledging that Russian military strategy varies per region, the focus on the Baltic Sea region limits the generalization of the research.

Second, this thesis disregards the economic domain. From a DIME (diplomatic, information, military, economic) perspective, the focus will be on the three components of deterrence: (1) capabilities (military domain), (2) credibility (diplomatic domain), and

¹⁷ Catherine Kelleher and Scott Warren, “Getting to Zero Starts Here: Tactical Nuclear Weapons,” Arms Control Association, 2022, <https://www.armscontrol.org/act/2009-10/getting-zero-starts-here-tactical-nuclear-weapons>

¹⁸ Rick Zipp, “What Exactly is a Low-Yield Nuclear Weapon?” *Medill News Service* (blog), *Medill School of Journalism, Northwestern University*, February 9, 2018, <https://dc.medill.northwestern.edu/blog/2018/02/09/exactly-low-yield-nuclear-weapon/#sthash.Cdj4t53c.dpbs>

(3) communication (information domain).¹⁹ Specifically, for the research of this thesis, the capabilities are Russian NSNW, the credibility is the Russian intent and the resolve of actually employing a NSNW, and communication refers to the way Moscow conveys its capability and credibility to a potential aggressor: the West.

Last, this thesis uses the West as a baseline for the aim of Russian deterrence. Indeed, the West is hardly a coherent political entity, and what is commonly called Western nations have significantly distinct national security interests. For example, the Arctic focus of the Norwegian Defense policy differs considerably from France's defense policy on Africa. Nevertheless, for Moscow, the West, first and foremost cemented by NATO, represents a perceived existential threat that must be deterred from further aggression. For this reason and practical purposes, this thesis refers to the West as the focal point of Russian deterrence.

Limitations and Delimitations

Two limitations negatively affect the research of this thesis. First, much of the data on nuclear weapons is classified. NSNWs play an essential role in Russian Federation's defense policy. As with any defense policy, many elements are not open to the public for research. The design, technology, and doctrine for the employment of NSNW are, to a large extent, state secrets.

Second, this thesis ignores the role of nonnuclear weapons on deterrence—for example, the role of cyber operations. Cyber operations are mainly classified, and there

¹⁹ Robbert P. Haffa Jr., "The Future of Conventional Deterrence: Strategies for Great Power Competition," *Strategic Studies Quarterly* 12, no. 4 (2018): 96-97, <https://www.jstor.org/stable/10.2307/26533617>.

are also no antecedents. Due to the novelty of the domain, there are no instances of battlefield use of cyber operations being capable of affecting command and control, the platform, or the delivery systems for nuclear warheads.

The thesis has three delimitations. First, despite the thesis being a comparative study, Russian deterrence and the role of NSNWs receive the most analytical attention. That makes it difficult to compare it to Western deterrence and the role of NSNWs. Nevertheless, the added value to the academic body of knowledge on deterrence and nuclear weapons lies in increasing the understanding of the Russian perspective.

Second, time restraints restrict the number of primary sources that feed the research of this thesis. For this reason, the thesis uses only two Russian journals: *Voennaia Mysl* (Military Thought) and *Strategicheskaya Stabil'nost* (Strategic Stability). For this thesis, these two suffice because they are influential in Russian military circles and often used in Western books and reports about Russian military thought. Indeed, the former prominent expert on future wars, Slipchenko, said *Military Thought* “mirrors our military scientific thought.”²⁰ Third, the focus on NSNW locks out strategic nuclear weapons. Arguably, they are more important in Moscow’s defense policy because they hedge against existential threats. Nevertheless, the focus on NSNWs is vital because they are an oddity: no other nation places similar importance on NSNWs as the Russian Federation.

²⁰ Makhmut Gareev and Vladimir Slipchenko, *Future War* (Fort Leavenworth, KS: Foreign Military Studies Office, 2007).

Significance of the Study

This research aims to contribute to the body of knowledge on the nature of Russian nuclear deterrence, specifically on the role and effectiveness of NSNWs as a political tool and a battlefield weapon. The objective is to increase understanding and give foreign policy officers and politicians tools to make policy decisions during times of crisis. In times of crisis, precise and unequivocal strategic communication is critical.²¹ There can be no room for misunderstanding arising from misinterpreting de-escalating signaling. The danger of unrestrained escalation beyond control increases the chance for unintended military conflict, with the threat of nuclear escalation, to the detriment of all parties involved.²²

Summary

There are four key points from the introduction to this thesis. First, the problem is that there is insufficient understanding of Russian nuclear deterrence with Western policy and decision-makers in the political and military domains. More problematic, on the specific topic of Russian NSNWs, a topic Moscow arguably attaches more importance to than Western governments, there is even less understanding. Second, this thesis aims to amend this lack of understanding of the Russian employment of NSNWs. With NSNWs playing a pivotal role in Russian deterrence, their adversaries must understand why.²³

²¹ Kristin Ven Bruusgaard, "Russian Strategic Deterrence," *Survival* 58, no. 4 (2016): 16, <https://doi.org/10.1080/00396338.2016.1207945>.

²² Schelling, "Nuclear Strategy," 421.

²³ Woolf, *Nonstrategic Nuclear Weapons*, 43.

Third, the primary research question is deduced from the problem and the purpose: How do differences in Russian and Western perceptions of the employment of NSNW affect deterrence? Last, the significance of increasing understanding of Russian employment of NSNW is to give policy advisors and decision-makers tools to make decisions during times of crisis. There can be no room for misunderstanding arising from misinterpreting de-escalating signaling. The danger of unrestrained escalation beyond control increases the chance for unintended military conflict to the detriment of all parties involved. Chapter 2 explores the development of deterrence theory and contrasts Russian with Western perspectives on deterrence. It concludes with constructing a theoretical framework that will focus the analysis in Chapter 4.

CHAPTER 2

LITERATURE REVIEW

Introduction

This literature review focuses on the primary research question: How do differences in Russian and Western perceptions of the employment of NSNW affect deterrence? Additionally, the first three secondary research questions drive the exploration of theoretical sources:

1. Does the role of NSNW differ in utility along the conflict spectrum?
2. How does the application on the battlefield differ?
3. What are the differences between Russia and the West in nesting NSNWs in conventional forces?

The literature review starts with a brief overview of the development of deterrence theory since the end of World War II. The second part evaluates Russian deterrence and contrasts it with Western perspectives. The review produced several differences between Russian and Western perspectives, which justified a division into two broad categories: differences in flexibility and a preoccupation with restoring equilibrium in the relationship. The structure of the second part runs along with these two categories. Last, the review suggests a theoretical framework to analyze the role of NSNWs in the Russian perspective on deterrence, which is the topic of Chapter 4.

A wide variety of sources feed the literature review. Primary sources are two Russian professional military journals: *Voennaia Mysl* (Military Thought) and *Strategicheskaya Stabil'nost* (Strategic Stability). Articles in these journals have an immediate, first-hand relationship to the matter researched: Russian military thought. A

rough estimation of the frequency of annotations in reports on Russian deterrence identified them. Secondary sources include books, reports by think tanks and governmental agencies, journals, and newspaper articles.

Western Deterrence Theory after World War II

According to Mazarr, deterrence is “the practice of discouraging or restraining someone—in world politics, usually a nation-state—from taking unwanted actions, such as an armed attack.”²⁴ In 2010, Knopf identified four waves of deterrence research since World War II.²⁵ The first wave followed the invention of the atomic bomb, a weapon so destructive that it defied existing theories on international relations. Bernard Brodie was one of the first military strategists to write about the impact of nuclear weapons on military theory. In his 1946 book, *The Absolute Weapon: Atomic Power and World Order*, he theorized on this impact, saying that the chief purpose of the military shifted from winning wars to preventing them.²⁶ Such insights were foundational for developing Cold War concepts such as Mutually Assured Destruction (MAD). Later, after joining the RAND Corporation, Brodie in *Strategy in the Missile Age* elaborated on accepting deterrence as the cornerstone of United States’ security policy. He pointed out “the depth

²⁴ Mazarr, *Understanding Deterrence*, 2.

²⁵ Jerry W. Knopf, “The Fourth Wave in Deterrence Research,” *Contemporary Security Policy* 31, no. 1 (2010): 1-2.

²⁶ Bernard Brodie, ed, *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt, Brace, and Company, 1946), 76.

and degree to which we are henceforward committed to the strategy of deterrence.”²⁷ According to Brodie, one of the vital consequences of this commitment was giving up “getting in the first blow,”²⁸ which means pre-empting an adversary with a military operation to get a decisive advantage in the conflict. If the United States would get in the first blow versus the Soviet Union, they could retaliate with nuclear weapons.

Another interesting contribution to laying the foundation for nuclear deterrence was war simulations by the RAND Corporation. The so-called Cold War Games gave insight into the impact of nuclear weapons on international relations. Interestingly, following Brodie’s assertion that the cost of deterrence failing was too high to risk, RAND’s Social Sciences Division (SSD) war game resulted in restraint of using nuclear weapons, not the war game of the Mathematical Analytics Division.²⁹ The Massachusetts Institute of Technology and the State Department built upon the SSD war game groundwork and design, illustrating the impact of RAND’s pioneering of nuclear deterrence theory development.

The second wave of deterrence theory came in the 1960s and used game theory to research deterrence. Thomas Schelling, in 1966, published his seminal work, *Arms and Influence*, using game theory as a lens to study coercion. He viewed coercion as

²⁷ Bernard Brodie, *Strategy in the Missile Age* (Santa Monica, CA: RAND Corporation, 1959), 393, https://www.rand.org/pubs/commercial_books/CB137-1.html.

²⁸ Brodie, *Strategy*, 393.

²⁹ John R. Emery, “Moral Choices without Moral Language: 1950s Political-Military Wargaming at the Rand Corporation,” *Texas National Security Review* 4, no. 4 (Fall 2021): 15, <http://dx.doi.org/10.26153/tsw/17528>.

overarching deterrence and compellence.³⁰ The difference between deterrence and compellence is that the former induces punishment if the opponent acts, whereas the latter induces punishment until the opponent acts. Indeed, some of his observations relate to Russian flexibility in applying deterrence measures, for example, when he notes that “the fact that violence—pure pain and damage—can be used or threatened to coerce and to deter, to intimidate and to blackmail, to demoralize and to paralyze, in a conscious process of dirty bargaining, does not by any means imply that violence is not often wanton and meaningless or, even when purposive, in danger of getting out of hand.”³¹ This notion is elaborated on later in this chapter.

The third wave in the 1970s was in response to the second wave, using empirical case studies to test deterrence theory. Lebow and Stein oppose “rational deterrence theory” from the second wave. They assert that empirical analysis of deterrence shows that “risk-prone gain maximizing initiators—the assumption of almost all theories of deterrence—are relatively uncommon.”³² Although this assumption pertains to research from the second wave, one should not overestimate its comprehensiveness. As Schelling pointedly asserts, “violence, especially war, is a confused and an uncertain activity, highly unpredictable, depending on decisions made by fallible beings organized into

³⁰ Tami Davis Biddle, “Coercion Theory: A Basic Introduction for Practitioners,” *The Strategist* 3, no. 2 (2020): 98.

³¹ Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 2020), 9.

³² Richard Ned Lebow and Janice Gross Stein, “Rational Deterrence Theory: I Think, Therefore I Deter,” *World Politics* 41, no. 2 (1989): 201, <https://www.acsu.buffalo.edu/~fczagare/PSC%20504/Lebow&Stein.pdf>.

imperfect governments, depending on fallible communications and warning systems and on the untested performance of people and equipment.”³³ An uncertain and unpredictable activity surely is not only conducted by risk-prone gain maximizing initiators.

The fourth wave and the one Knopf himself rode in 2010, was a response to 9/11 and focussed on deterrence in asymmetric threats emerging out of terrorist networks and rogue states.³⁴ After the Cold War, deterrence theory lost some of its relevance in policy debates.³⁵ The end of great power politics between nuclear-armed states ushered in a period of concern about terrorist networks. Their members were presumably “undetterables.”³⁶ In recent years, however, there has been a resurgence in research on deterrence theory following the policy focus on great power competition, notably following the annexation of Crimea by the Russian Federation in 2014. Whether this focus comprises the fifth wave of deterrence theory is yet to be determined.

Deterrence theory in the Russian Federation differs markedly from its equivalent in the West, and one cannot categorize it into the same four waves as Western deterrence theory.³⁷ The Russian overarching concept of *strategicheskoe sderzhivanie* (strategic

³³ Schelling, *Arms and Influence*, 93.

³⁴ *Ibid.*, 5, 9.

³⁵ Stephen L Quackenbush and Frank C Zagare, *Modern Deterrence Theory: Research Trends, Policy Debates, and Methodological Controversies* (Oxford, England: Oxford University Press, 2016), 23, <https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199935307.001.0001/oxfordhb-9780199935307-e-39>.

³⁶ Thomas L. Friedman, “Iraq, Upside down,” *The New York Times*, September 18, 2002, <https://www.nytimes.com/2002/09/18/opinion/iraq-upside-down.html>.

³⁷ Adamsky, “Deterrence a la Ruse,” 163.

deterrence) is much broader than the Western concept. The literature review identified two elements that make up this increased breath: *strategicheskoe sderzhivanie* is more flexible and revolves more around restoring the equilibrium with the West.³⁸ The next two parts of this review focus on these two elements.

Russian *Strategicheskoe Sderzhivanie*: Flexibility

Three key components account for flexibility in the Russian deterrence posture: escalation management, continuity along the conflict spectrum, and high conventional-nuclear integration.

Escalation Management

Escalation management is the first component that provides the Russian leadership with flexibility within *strategicheskoe sderzhivanie*.³⁹ Escalation management is the set of measures Moscow engages in to increase the military security of the Russian Federation. The 2014 Military Doctrine defined military security as the “*state of protection of the vital interests*” and categorized the conflict spectrum along the following stages:⁴⁰

³⁸ Kofman, “Russian Strategy,” ii.

³⁹ Ibid.

⁴⁰ President of the Russian Federation, *The Military Doctrine of the Russian Federation*, Approved by the President of the Russian Federation (Moscow, Russia: The Kremlin, December 25, 2014), <https://rusemb.org.uk/press/2029>.

Table 1. Stages of Conflict

Stage of escalation	Description
Large-scale war	“a war between coalitions of states or the largest states of the world community, in which the parties pursue radical military-political goals”
Regional war	“a war involving several states of the same region, waged by national or coalition armed forces, during which the parties pursue important military-political goals”
Local war	“a war in which limited military-political goals are pursued, military operations are conducted within the borders of opposing states and which mainly affects the interests of only these states (territorial, economic, political and others)”
Armed conflict	“an armed clash of a limited scale between states (international armed conflict) or opposing parties within the territory of one state (internal armed conflict)”
Military threat	“a state of interstate or intrastate relations characterized by a real possibility of a military conflict between the opposing sides, a high degree of readiness of any state (group of states), separatist (terrorist) organizations to use military force (armed violence)”
Military danger	“the state of interstate or intrastate relations, characterized by a combination of factors that, under certain conditions, can lead to the emergence of a military threat”

Source: Michael Kofman, Anya Fink, and Jeffrey Edmonds, “Russian Strategy for Escalation Management: Evolution of Key Concepts,” (CNA Research Memorandum, Center for Naval Analyses, Arlington, VA, April 2020), 6, https://www.cna.org/CNA_files/PDF/DRM-2019-U-022455-1Rev.pdf.

Managing escalation for Moscow is taking measures during peacetime and war to either move or prevent Moscow's relationship with an adversary from going from one category to another. According to Bartosh, the necessity to escalate or de-escalate with deterrence measures comes from the threat that emanates from the United States. In "Deterrence and Coercion in Hybrid Warfare Strategy," he argues that United States' coercion aims to put Russia under external control. The United States put in place a system of forceful coercion, "the main goal of which is the preservation of the military-political and financial-economic military control by the United States as the leader of the West over the system of international relations and the military-political situation."⁴¹ To underpin this argument, Bartosh brings forth the "harsh and unceremonious coercion by Washington to the presidents of Yugoslavia (S. Milosevic) and Iraq (S. Hussein)" when diplomacy failed. "Military-force measures were applied" to remove them from power.⁴² To prevent the Kremlin from befalling the same fate as Milosevic and Hussein, Bartosh argues for flexible escalation management to counter this threat.

The Russian view on escalation and de-escalation differs from the West's view. In the West, de-escalation of a conflict and, specifically, preventing it from evolving into a military conflict usually is the aim of diplomacy.⁴³ President Biden's *Interim National*

⁴¹ Aleksandr A. Bartosh, "Deterrence and Coercion in the Hybrid Warfare Strategy," *Military Thought*, no. 9 (2021): 21, <https://web.archive.org/web/20220214160719/https://vm.ric.mil.ru/upload/site178/f84WwrikI8.pdf>.

⁴²Ibid., 28.

⁴³ See for example Ann Simmons, "US Ambassador to Russia Says De-Escalation Is Key Objective at Ukraine Talks," *The Wall Street Journal*, January 4, 2022, <https://www.wsj.com/articles/u-s-ambassador-to-russia-says-de-escalation-is-key-objective-at-ukraine-talks-11641314171>.

Security Strategic Guidance illustrates this principle: “the use of military force should be a last resort, not the first; diplomacy, development, and economic statecraft should be the leading instruments of American foreign policy.”⁴⁴ In contrast, from Moscow’s perspective, employing military forces is the preferred tool to further the state’s vital security interests. The Russian Military Doctrine is signed by President Putin, illustrating the importance of the military as a tool of foreign policy.⁴⁵ Whereas the West generally considers the use of armed forces a last resort, Moscow employs them as an integral element of strategic deterrence.

Additionally, Russian escalation management does not divide deterrence conceptually from compellence.⁴⁶ In the West, the former has a passive posture and the latter an active one.⁴⁷ Deterrence from the Western perspective is achieved by signaling strength and resolve, *having* a powerful military, not *using* it. Compellence, on the other hand, is achieved by actively conducting a military measure. For example, deploying a carrier strike group along the coast of the target country that must be compelled into behavior more beneficial to the compellers interests. As we shall see later in this chapter, Russian escalation management blurs the difference between the two.

⁴⁴ U.S. President, *Interim National Security Strategic Guidance* (Washington, DC: The White House, March 2021), 14, <https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf>.

⁴⁵ President of the Russian Federation, *The Military Doctrine of the Russian Federation*.

⁴⁶ Kofman. “Russian Strategy,” 3.

⁴⁷ Mazarr, *Understanding Deterrence*, 2.

In sum, using military measures to manage the level of escalation is an art that Moscow masters to a higher degree than most Western governments. The military provides the Kremlin with more flexible deterrence options.

Continuity along the Conflict Spectrum

The second flexibility component in Russian deterrence is continuity along the conflict spectrum. A conflict spectrum is a conceptual categorization of military and non-military activities. The main characteristic “is the level of violence, ranging from peaceful interaction among international actors...to major combat operations/general war. Military forces operate throughout this spectrum.”⁴⁸

Russian deterrence measures aim to influence an opponent’s decision-making process along the conflict spectrum, from peace on one end to an all-out war on the other end.⁴⁹ For Moscow, the active use of measures to influence opponents’ behavior for increased alignment with Russian interests is independent of war and peace. All possible measures are valued based on their utility.⁵⁰ For example, during peacetime, threatening an opponent with retaliation that causes unacceptable damage to prevent military action against Russian interests is viewed as principally similar to detonating a low-yield nuclear warhead over the ocean to de-incentivize an opponent from deploying a carrier strike group near Russian shores in wartime. A notable and often misunderstood Russian

⁴⁸ Aurelian Ratiu, “Comprehensive Approach in the Full Spectrum of Conflict,” (Nicolae Bălcescu Land Forces Academy, 2015): 185, DOI: 10.1515/kbo-2018-0027.

⁴⁹ Bruusgaard, “Russian Strategic Deterrence,” 17; Adamsky, “Deterrence a la Ruse,” 172.

⁵⁰ Bruusgaard, “Russian Strategic Deterrence,” 18.

depiction of the conflict spectrum is from a speech of Chief of the Russian General Staff Gerasimov in 2013.⁵¹ His spectrum has six phases, ranging from covert origin to re-establishment of peace with specific military measures allocated to each phase. For example, *strategic deployment* occurs in phases two, three, and four. In recent years, the development and deployment of the 9M729 ground-launched cruise missile, which can be armed with a conventional and a nuclear warhead and has a range of approximately 2000 kilometers, is an example of *strategic deployment*.⁵² Arguably, Moscow views its relationship with the West as somewhere between phases three and four. Several authors misunderstand Gerasimov's conflict spectrum in literature as *the Gerasimov doctrine* or Russian hybrid warfare.⁵³ It led the author who coined the term *Gerasimov doctrine* to apologize for it.⁵⁴ Figure 1 depicts Gerasimov's conflict spectrum, with *strategic deployment* occurring in phases two, three, and four.

⁵¹ Valery Gerasimov, "The Value of Science in Foresight: New Challenges Require Rethinking the Forms and Methods of Warfare," Speech, *VPK*, February 26, 2013, <https://vpk-news.ru/articles/14632>.

⁵² Missile Threat, "9M729."

⁵³ See for example Dave Johnson, "Russia's Approach to Conflict – Implications for NATO's Deterrence and Defence," (Research Paper No. 111, Research Division, NATO Defense College, April 2015), https://www.files.ethz.ch/isn/190782/rp_111.pdf.

⁵⁴ Mark Galeotti, "I am Sorry for Creating the Gerasimov Doctrine," *Foreign Policy*, March 5, 2018, <https://foreignpolicy.com/2018/03/05/im-sorry-for-creating-the-gerasimov-doctrine/>.

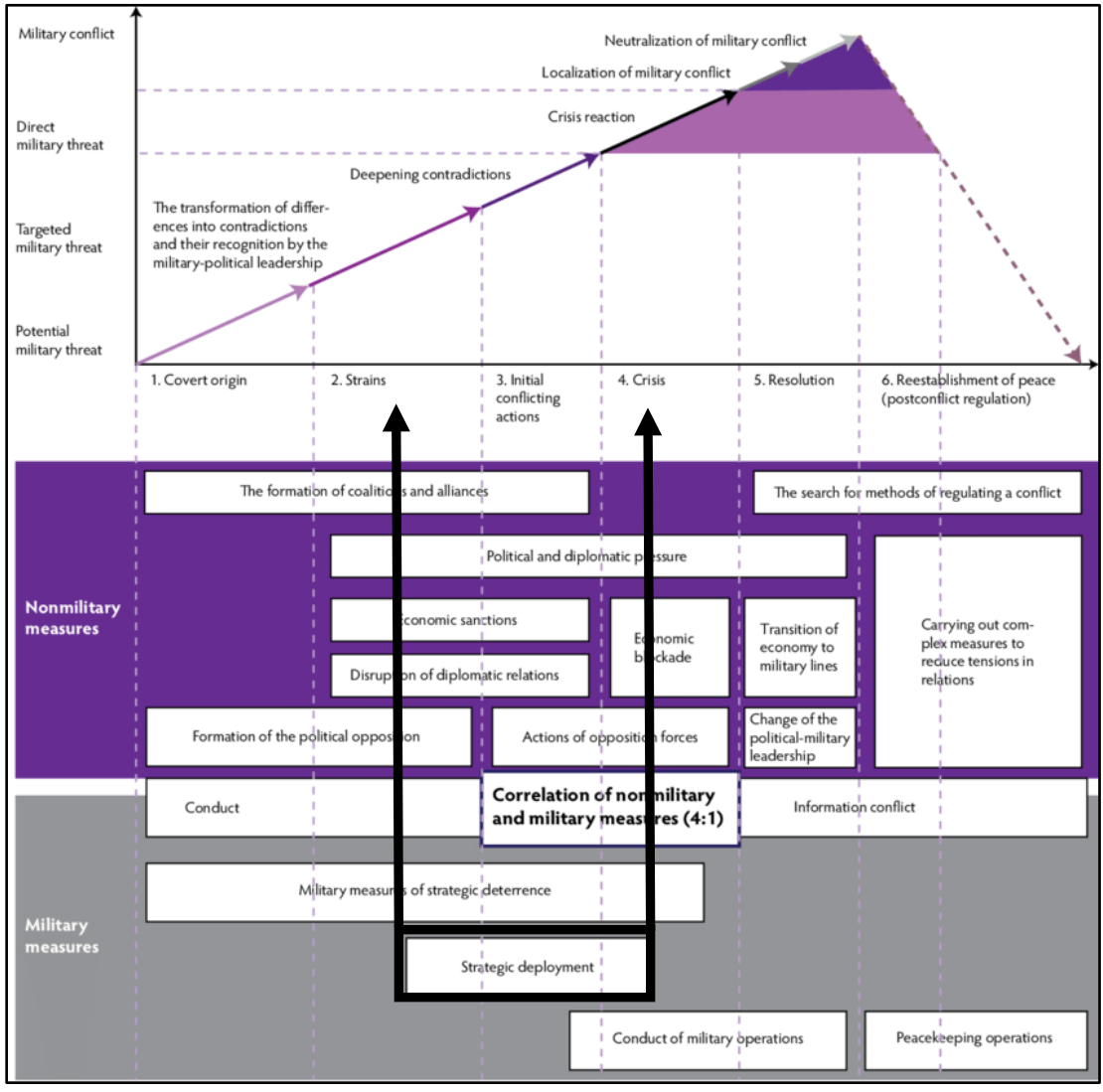


Figure 1. Gerasimov's Conflict Spectrum

Source: Valery Gerasimov, "The Value of Science in Foresight: New Challenges Require Rethinking the Forms and Methods of Warfare," Speech, VPK, February 26, 2013, <https://vpk-news.ru/articles/14632>.

In contrast, the West views deterrence as a posture that seeks to maintain the peacetime status quo between two (or more) nations.⁵⁵ When military conflict erupts, then deterrence fails. This dichotomous perspective on deterrence is less flexible than the Russian one because it has no utility after the commencement of military conflict. The Kremlin considers specific measures as deterring further (nuclear) escalation of a military conflict. In the West, however, the concept of deterrence has less utility if the peacetime status quo breaks, leaving decision-makers to question how to get back to the status quo ante. Indeed, war and peace are two distinctive conditions.⁵⁶ For Moscow, *strategicheskoe sderzhivanie* measures remain useful to improve the situation or prevent worse during a war.

Conventional-Nuclear Integration

The third component of flexibility in Russian deterrence derives from a high doctrinal and technical conventional-nuclear integration. Doctrinal conventional-nuclear integration, the degree to which military thinking integrates conventional and nuclear capabilities, is much higher than in the West. In Russian military thinking, if escalation management with conventional means is ineffective, nuclear means are a logical next step. Achasov and Burenok illustrate this train of thought when they state that “if it turns

⁵⁵ Lawrence Friedman, “Introduction – The Evolution of Deterrence Strategy and Research,” in *Netherlands Annual Review of Military Studies: Deterrence in the 21st Century—Insights from Theory and Practice*, eds. Frans Osinga and Tim Sweijts (New York: Springer, 2020), 1.

⁵⁶ Colin Gray, “The American Way of War: Critique and Implications,” in *Rethinking the Principles of War*, ed. Anthony D. McIvor (Annapolis, MD: Naval Institute Press, 2005), 27.

out to be impossible to keep it from starting the aggression or its continuation by non-nuclear means, then transition to the use of nuclear weapons will be natural and inevitable.”⁵⁷ This contrasts sharply with Western deterrence. In the West, nuclear escalation is not unavoidable and fundamentally changes the nature of a military conflict.⁵⁸

Additionally, conventional-nuclear integration permeates organizational armed forces design. The Operational-Strategic Command West, the Saint Petersburg-based regional joint headquarters responsible for conducting operations along NATO’s eastern flank, commands air-launched, sea-launched, and ground-launched nuclear capabilities.⁵⁹ The land component of this military command echelon consists of three combined arms armies, with each having a missile brigade capable of launching nuclear warheads. Figure 2 depicts the location of the missile brigade of the 6th Combined Arms Army, illustrating the conventional-nuclear integration in Russian army design.

⁵⁷ O. B. Achasov and V. M. Burenok, “Non-nuclear Deterrence,” *Military Thought* 17, no. 1 (January-March 2008): 12-15, <https://go.gale.com/ps/i.do?p=AONE&u=anon~bcbe4be9&id=GALE|A179950654&v=2.1&it=r&sid=googleScholar&asid=18cb48cb>.

⁵⁸ North Atlantic Treaty Organization, “NATO’s Nuclear Deterrence Policy and Forces,” last updated February 23, 2022, https://www.nato.int/cps/en/natohq/topics_50068.htm.

⁵⁹ Defense Intelligence Agency, *Russia Military Power: Building a Military to Support Great Power Aspirations* (Washington, DC, 2017), 12, https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Russia_Military_Power_Report_2017.pdf.



Figure 2. The 26th Missile Brigade Subordinated to the 6th Combined Arms Army

Source: Konrad Muzyka, “Russian Forces in the Western Military District,” (CNA Occasional Paper, Center for Naval Analyses, Arlington, VA, June 2021), 18, https://www.cna.org/CNA_files/PDF/Russian-Forces-in-the-Western-Military-District.pdf.

Despite the integration of NSNWs in the conventional Combined Arms Army’s, the release authority for striking with a nuclear warhead remains with the Russian political and military leadership. The Kremlin developed a system that ensures unauthorized launch of nuclear weapons is virtually impossible while simultaneously

guaranteeing swift launch when the leadership gives the order.⁶⁰ There are three nuclear briefcases: one with President Putin, one with Defense minister Shoigu, and one with Chief of the General Staff Gerasimov.⁶¹ Although hard to ascertain, at least two out of three, one of them being the President, must authorize a launch.⁶² When authorized, redundant communication systems transmit it to the General Staff, who validates the authenticity of the authorization and prepares the order to launch.⁶³ After they complete the launch package, the General Staff transmits it to the crews on the ground operating the nuclear delivery systems.

The second element of conventional-nuclear integration is technical in nature. In recent years, the Russian military heavily invested in dual-capable cruise and ballistic missiles. James Acton describes the dual-capable nature of delivery systems as ambiguous: “superficially similar nuclear and nonnuclear delivery systems and dual-use delivery systems (for which both nuclear and conventional warheads are available and which can carry either).”⁶⁴ Virtually all the Russian ballistic and cruise delivery system

⁶⁰ Defense Intelligence Agency, *Russia Military Power*, 27.

⁶¹ Kristin ven Bruusgaard, “Understanding Putin’s Nuclear Decision-Making,” *War on the Rocks*, March 2022, <https://warontherocks.com/2022/03/understanding-putins-nuclear-decision-making/>.

⁶² Ibid.

⁶³ Valery E. Yarynich, *C3: Nuclear Command, Control, Cooperation* (Washington, DC: Center for Defense Information, 2003), 18.

⁶⁴ James M. Acton, *Is it a Nuke? Pre-launch Ambiguity and Inadvertent Escalation* (Washington, DC: Carnegie Endowment for International Peace, 2020), 2, https://carnegieendowment.org/files/Acton_NukeorNot_final.pdf.

inventory is dual-capable.⁶⁵ For example, the KH-101/102 is a line of air-launched cruise missiles with an approximate 3,000 kilometers range.⁶⁶ The KH-101 delivers a conventional payload, whereas the KH-102 can carry a nuclear payload of about 250 kilotons.

The dual-capable design principle provides the Russian General Staff, the highest military organizational command element within the Russian Armed Forces, with flexible deterrence response options. A conventional precision strike on military battlefield targets and a low-yield nuclear strike on a military airfield can be executed with the same air-launched cruise missile, while these options achieve distinctly different objectives. Additionally, the Russian dual-capable inventory allows for further flexibility in escalation management.⁶⁷ For example, executing air patrols with Tu-160 Blackjacks, a platform capable of delivering a KH-101/-102, sends a threatening message of possible nuclear escalation. *In extremis*, surveillance capability might detect a Russian missile's launch, but it is impossible to assess the payload. Whether it is conventional or nuclear will only be revealed after impact. Arguably, Russian leadership will be better at managing this ambiguity than Western leadership because it is part of their doctrine.

In contrast, Western countries integrate to a much lesser degree conventional and nuclear forces. First, Western nations have fought limited contingency wars for the past

⁶⁵ Kristin ven Bruusgaard, "Russian Nuclear Strategy and Conventional Inferiority," *Journal of Strategic Studies* 44, no. 1 (2021): 24, <https://doi.org/10.1080/01402390.2020.1818070>.

⁶⁶ Missile Threat, "Kh-101/Kh-102," Center for Strategic and International Studies, last updated July 31, 2021, <https://missilethreat.csis.org/missile/kh-101-kh-102/>.

⁶⁷ Bruusgaard, "Russian Nuclear Strategy," 24.

three decades in countries such as Iraq and Afghanistan. In those conflicts, there is no utility to NSNWs, and thus integration of conventional and nuclear capabilities is not part of Western doctrine. Military professionals recently started discussing the utility of integrating nuclear weapons in conventional operational planning with the re-orientation to great power competition.⁶⁸ Additionally, Western nations hardly integrate conventional and nuclear forces on a technical level. Western countries do not possess dual-capable ballistic or cruise missiles. Although they have dual-capable aircraft capable of delivering conventional and nuclear bombs, their utility is questionable in operations at NATO's eastern flank due to advanced air defense systems such as the Russian S-400 TRIUMPH.

In sum, Russia derives flexibility in deterrence response measures from a high doctrinal and technical conventional-nuclear integration in their military. In contrast, Western countries integrate these forces to a much lesser degree.

Russian *Strategicheskoe Sderzhivanie*: Restoring Equilibrium

Zero-sum thinking underpins the Russian security paradigm.⁶⁹ Zero-sum in security policy means that Moscow's thinking about security begins from the idea that a security gain for the West automatically is a loss for Russia. It contrasts sharply with the Western concept of cooperative security: the idea that states can work together on

⁶⁸ Nathan List, "Conventional Nuclear Integration: Reinforcing Strategic Stability," (Research Report, Air War College, March 2020), 1, <https://apps.dtic.mil/sti/pdfs/AD1107497.pdf>.

⁶⁹ Rolf Mowatt-Larssen, "The Strategic Balance: A New US-Russian Zero Sum Game," Just Security, October 17, 2016, 1, <https://www.justsecurity.org/33635/strategic-balance-u-s-russian-sum-game/>.

common problems to increase the security of all involved. Podkorytov in *Strategic Stability* illustrates zero-sum thinking in Russian military thought. His article “Methodological apparatus for forecasting behavior of the military-political leadership of states during the military phase of the conflict”⁷⁰ mathematically models conflicts to predict adversarial decision-making. Figure 3 is an example of an equation in Podkorytov’s article.

$$\frac{\partial}{\partial u} a_{\lambda}(u, \lambda) = \frac{\partial}{\partial \lambda} a_u(u, \lambda),$$

Figure 3. A Mathematical Model from Podkorytov’s Article

Source: Y. A. Podkorytov, “Methodological Apparatus for Forecasting Behavior of the Military-Political Leadership of States during the Military Phase of the Conflict.” *Strategic Stability*, no. 4 (2017): 12, <https://www.elibrary.ru/item.asp?id=30577092>.

Russian military thinkers often balance equations to restore equilibrium in Moscow’s relationship with the West. Mathematical modeling, whereby an increase on one side of the equation automatically leads to an imbalance, is common practice in Russian military journals. Zero-sum thinking drives two separate but interrelated elements of Russian preoccupation with restoring equilibrium: (1) nuclear deterrence compensates for Moscow’s perceived conventional inferiority and (2) the blurring between offensive and defensive measures.

⁷⁰ Y. A. Podkorytov, “Methodological Apparatus for Forecasting Behavior of the Military-Political Leadership of States during the Military Phase of the Conflict,” *Strategic Stability*, no. 4 (2017): 7-16, <https://www.elibrary.ru/item.asp?id=30577092>.

Compensation for Perceived Conventional Inferiority

The perceived conventional military inferiority vis-à-vis the West drives Moscow's pursuit to restore equilibrium.⁷¹ Concerns about this inferiority started after the collapse of the Warsaw Pact in 1991 and the United States' display of conventional military power during operation Desert Storm. The question of how Moscow could defend itself against a similar United States operation along the Russian border emerged in Russian military writing.⁷² One answer was the employment of NSNWs to compensate. On the one hand, NSNWs would deter the United States and NATO from an offensive operation aimed at Moscow. On the other hand, should a military conflict erupt, a single battlefield use of a NSNW could render ineffective a division.

During the 2000s and 2010s, Russian military thought and military force development shifted to conventional and non-military capabilities.⁷³ Nevertheless, the Russian General Staff prioritized nuclear modernization by introducing new delivery systems into the force over the past decade. For example, the sea-launched cruise missile 3M-54 Kalibr came into service in 2015.⁷⁴ Although there seems to be disagreement on whether this specific missile can deliver a nuclear warhead, the Kalibr family to which the 3M-54 belongs is dual-capable.⁷⁵

⁷¹ Bruusgaard, "Russian Nuclear Strategy," 3.

⁷² Kofman, "Russian Strategy," 43.

⁷³ Bruusgaard, "Russian Strategic Deterrence," 9.

⁷⁴ Missile Threat, "3M14 Kalibr," Center for Strategic and International Studies, last updated March 7, 2022, <https://missilethreat.csis.org/missile/ss-n-30a/>.

⁷⁵ Valeriy Akimenko, "Russia and Strategic Nonnuclear Deterrence: Capabilities, Limitations and Challenges," (Briefing Paper, Russia and Eurasia Programme, The Royal

Nowadays, the perceived conventional inferiority vis-à-vis NATO still permeates Russian military writing and military planning. Kopylov and Vasiliev illustrate its importance in developing military thought in their 2021 article “Military Militarization of International Politics and its Impact on the Defense of Russia’s security.”⁷⁶ In it, they express concerns about the militarization of the United States’ foreign policy. According to Kopylov and Vasiliev, examples of this policy are NATO’s exercise Defender 2020 and the creation of European Rapid Reaction forces. To balance this, from their perspective, threatening United States foreign policy, they suggest using a combination of diplomatic measures and military mobilization to restore the equilibrium.

Contemporary military planning shows operational concepts that attempt to mitigate the perceived Russian conventional inferiority.⁷⁷ Crucial elements of the General Staff’s planning at their western flank involve increasing military readiness for a pre-emptive strike. Chief of the Russian General Staff Gerasimov best captured this logic during his address to the Russian Academy of Military Science in March 2019: “acting quickly, we should preempt the enemy with our preventive measures, promptly identify

Institute of International Affairs, Chatham House, July 2021), 5, <https://www.chathamhouse.org/sites/default/files/2021-08/2021-07-29-russia-strategic-non-nuclear-akimenko.pdf>.

⁷⁶ A. V. Kopylov and I. V. Vasiliev, “International Politics Militarization and Its Effect on the Defense Security of Russia,” *Military Thought*, no. 4 (2021): 6-13, <https://vm.ric.mil.ru/upload/site178/dRMWNubXQk.pdf>.

⁷⁷ Michael Kofman, Anya Fink, Dmitry Gorenburg, Mary Chesnut, Jeffrey Edmonds, and Julia Waller, “Russian Military Strategy: Core Tenets and Operational Concepts,” (CNA Research Memorandum, Center for Naval Analyses, Arlington, VA, August 2021), https://www.cna.org/CNA_files/pdf/Russian-Military-Strategy-Core-Tenets-and-Operational-Concepts.pdf.

his vulnerabilities and create threats of unacceptable damage to him. This ensures the capture and retention of the strategic initiative.”⁷⁸ Thus, a pre-emptive military operation versus NATO before it can mobilize and project its full military force in the region, and subsequently, threaten with unacceptable damage levels the playing field.

Obviously, for NATO, their conventional superiority is not a problem. However, it does become problematic when there is insufficient understanding from the Western perspective of the severity of these Russian security concerns. Indeed, necessity is the mother of invention, or rather, intervention. The Russian political and military leadership might intervene if they feel cornered to the extent that they perceive a military conflict inevitable. Gerasimov’s address in 2019 to the Russian Academy of Military Science is an omen.

In sum, a preoccupation with restoring equilibrium with NATO drives *strategicheskoe sderzhivanie*. It has its roots in the 1990s but still affects current military modernization priorities and planning in the Russian military.

The Blurring of Offensive and Defensive Measures

The blurring between offensive and defensive measures is the second element of Russian preoccupation with restoring equilibrium in their relationship with the West.⁷⁹ Moscow values measures on their utility to increase strategic stability. Strategic stability “requires a balance in strategic air, land, and maritime nuclear forces—and a balance of

⁷⁸ Redstar, “Vectors of Development of Military Strategy,” 2019, <http://redstar.ru/vektory-razvitiya-voennoj-strategii/>.

⁷⁹ Bruusgaard, “Russian Strategic Deterrence,” 18.

risk posed by long-range high precision strike systems and missile defense capabilities to these strategic nuclear capabilities.”⁸⁰ Currently, from the perspective of the Kremlin, the relationship with the West is imbalanced. To restore equilibrium, Moscow has strengthened “strategic air, land, and maritime nuclear forces” (offensive) and reduces “risk posed by long-range high precision strike systems” (defensive).

Salyukov and Shigin illustrate this in “The Role and Place of the Ground Forces in Strategic Deterrence.” They argue that the Russian Federation must defend itself against aggressive American intimidation. The Ground Forces’ contribution to this defense is long-range fires. Specifically, they mention the Iskandr-M dual-capable short-range missile, a ballistic missile with a range of 480 km.⁸¹ From a Western perspective, the introduction of the Iskandr-M is an offensive measure. Indeed, its deployment in Kaliningrad directly threatens Berlin. From the Russian perspective, it aims to restore equilibrium.⁸² Interestingly, Salyukov and Shigin discuss the Iskandr-M as a means of strategic nonnuclear containment. In reality, the missile is dual-capable, allowing Moscow to use it for regional nuclear deterrence.⁸³

⁸⁰ Stephen R. Covington, “The Culture of Strategic Thought Behind Russia’s Modern Approaches to Warfare,” (Paper, Belfer Center for Science and International Affairs, Harvard Kennedy School, Cambridge, MA, October 2016), <https://www.belfercenter.org/sites/default/files/legacy/files/Culture%20of%20Strategic%20Thought%203.pdf>.

⁸¹ Missile Threat, “Russia deploys Iskander Missiles to Kaliningrad,” Center for Strategic and International Studies, February 5, 2018, <https://missilethreat.csis.org/russia-deploys-iskander-missiles-kaliningrad-2/>.

⁸² Salyukov, “The Role and Place,” 27.

⁸³ Petr Topychkanov, “Russia’s nuclear doctrine moves the focus from non-Western threats,” *WritePeace* (blog), *Stockholm International Peace Research Institute*,

In contrast, there is a more dichotomous delineation between offensive and defensive in the West, illustrated by the claim that NATO is a defensive alliance.⁸⁴ Clearly, Moscow contests this claim, arguing that NATO's expansion eastward is offensive. The blurring of offensive and defensive measures becomes problematic when the West perceives a Russian defensive measure as offensive.⁸⁵ The intended Russian signaling becomes distorted by how the West perceives the measure when this happens, increasing the risk for escalation and triggering conflict.⁸⁶

In sum, the Kremlin values military measures on their utility to restore equilibrium in their relationship with the West. Whether offensive or defensive in nature is less important, blurring the difference between them and distorting signaling.

Summary and Theoretical Framework

Three elements provide Moscow with flexible deterrence response options. First, employing the military for escalation management is an art that Moscow masters to a

October 1, 2020, <https://www.sipri.org/commentary/blog/2020/russias-nuclear-doctrine-moves-focus-non-western-threats>.

⁸⁴ On NATO's website it reads: "Fact: NATO is a defensive alliance, whose purpose is to protect our member states. Our exercises and military deployments are not directed against Russia – or any other country. All Allies reaffirmed at our Brussels Summit that the Alliance does not seek confrontation and poses no threat to Russia." North Atlantic Treaty Organization, "NATO-Russia Relations: The Facts," last updated January 27, 2022, https://www.nato.int/cps/en/natohq/topics_111767.htm m.

⁸⁵ Robert E. Berls, Leon Ratz, and Brian Rose, "Rising Nuclear Dangers: Diverging Views of Strategic Stability," (NTI Paper, Nuclear Threat Initiative, Washington, DC, October 2018): 12, <https://www.jstor.org/stable/pdf/resrep20035.pdf?refreqid=excelsior%3A461433af56d0f8ed06ec92382c726d81>.

⁸⁶ Bruusgaard, "Russian Strategic Deterrence," 12.

higher degree than most Western governments. The military provides the Kremlin with more flexible deterrence options. Second, Russian deterrence measures aim to influence an opponent's decision-making process along the conflict spectrum, from peace on one end to an all-out war on the other end. Last, Russia derives flexibility in deterrence response measures from a high doctrinal and technical conventional-nuclear integration in their military. In contrast, Western countries integrate these forces to a much lesser degree.

Perceived conventional inferiority and the blurring of offensive and defensive measures are two elements of Russian preoccupation with restoring equilibrium in their relationship with the West. Both elements contrast sharply with the way the West views the relationship. The West has a more dichotomous posture towards the difference between offensive and defensive measures. Also, it does not view their conventional military superiority as problematic. Interestingly, the relationship inverted from the Cold War situation with NATO developing the AirLand doctrine in 1982 to compensate for Soviet conventional superiority.

The theoretical framework in Figure 3 visualizes the key findings of the literature review in an oversimplified way to enhance contrast. It depicts the five elements of Russian deterrence discussed in Chapter 2, categorized in two characteristics: flexibility and equilibrium.

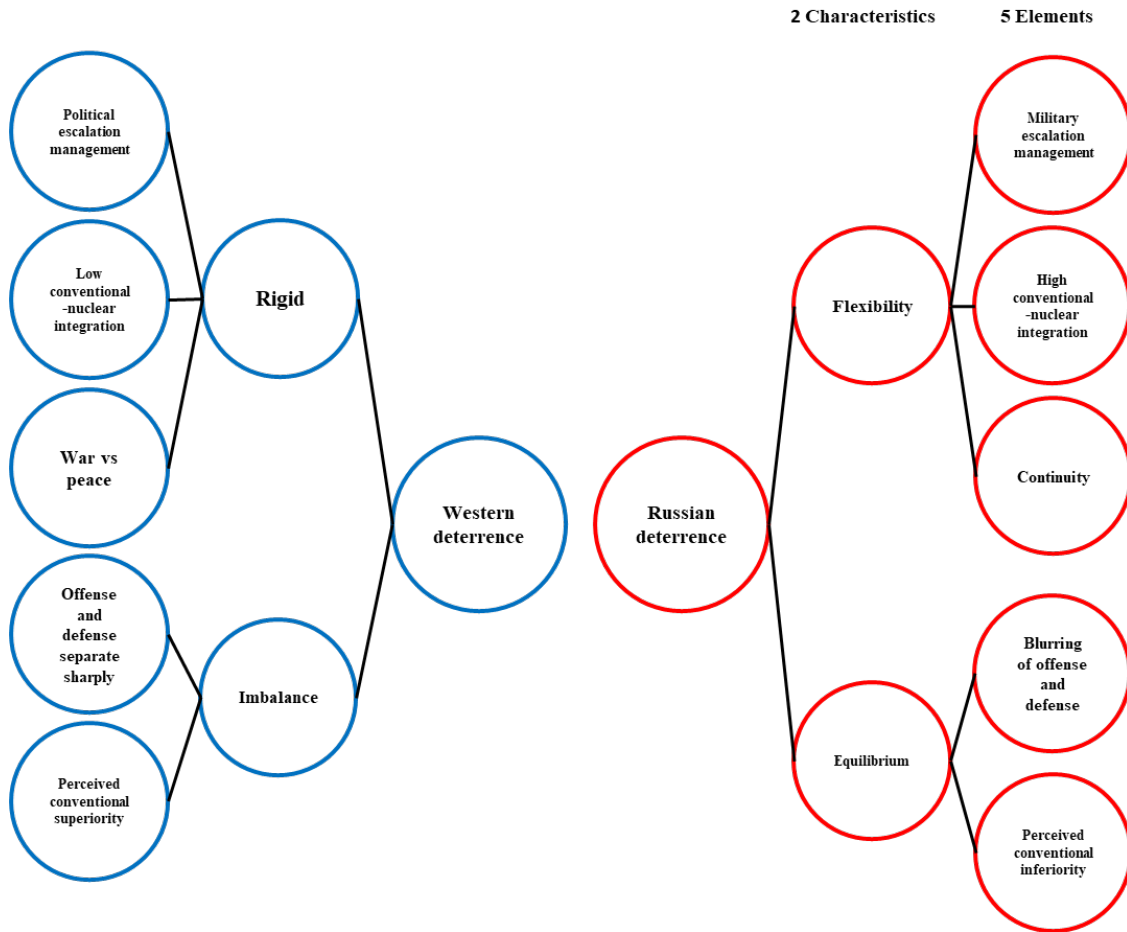


Figure 4. The Theoretical Framework Developed in Chapter 2 is Visualized in an Oversimplified Way to Enhance Contrast

Source: Created by author.

This theoretical framework provides the lens through which the analysis of primary and secondary sources on the role of Russian NSNWs in Chapter 4 occurs.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This chapter covers the research design. The first part discusses why the chosen method is qualitative. The second part describes the type of data and how it will be collected. The third part describes the process used for analyzing data. Last, this chapter looks at an ethical consideration when debating nuclear weapons and how this thesis relates to it. This research design is the framework for answering the primary research question in Chapter 4 of how differences in Russian and Western perceptions of the employment of NSNW affect deterrence. The theoretical framework suggested in the literature review shapes the research design by focusing the collection of data on NSNW and provides the lens through which to look at primary and secondary sources for analyzing data.

Method

The primary ontological reason for choosing a qualitative research approach is the systematic inquiry into the inherently behavioral phenomenon of deterrence.⁸⁷ Specifically, the thesis inquires into how Moscow perceives measures to deter the West from further eroding essential Russian security interests. The second reason is to generate new ideas and better understand the role of NSNW in Russian deterrence. Ideas and

⁸⁷ Paul K. Davis, J. Michael Gilmore, David R. Frelinger, Edward Geist, Christopher K. Gilmore, Jenny Oberholtzer, and Danielle C. Tarraf, *Exploring the Role Nuclear Weapons Could Play in Deterring Russian Threats to the Baltic States* (Santa Monica, CA: RAND Corporation, 2019), 8, <https://doi.org/10.7249/RR2781>.

understanding are hard to quantify. Thus, the data needed to answer the research question must also be qualitative: Russian articles on deterrence and NSNW as primary sources, and articles, books, and reports by experts on Russian deterrence and NSNWs as secondary sources. These sources generate perspectives, concepts, and ideas that, analyzed holistically, give insight into Russian NSNWs role.

The research design is comparative because it compares and contrasts Western and Russian deterrence to determine the role of Russian NSNW. According to Charles Tilly's categorization of comparative studies, this thesis is an individualizing comparison contrasting "a small number of cases in order to grasp the peculiarities of each case."⁸⁸ This technique allows for an in-depth understanding of the role of NSNW.⁸⁹ The comparative design draws from two techniques. First, the design shares with content analysis the characteristic of interpreting texts to extract meaning: Russian NSNWs role. Also, content analysis is suitable for research on communication, and the vital component of deterrence is just that. This thesis draws from grounded theory in that it seeks to develop a rudimentary approach to understanding the Russian employment of NSNW. The literature review resulted in a theoretical framework serving as the lens for assigning meaning to their employment.

Time constraint limits the depth of the theoretical framework suggested in Chapter 2 and will limit the understanding of Russian NSNWs presented in Chapter 4.

⁸⁸ Charles Tilly, *Big Structures, Large Processes, Huge Comparisons* (New York: Russell Sage Foundation, 1984), 84.

⁸⁹ Michael Adiyia and William Ashton, "Comparative Research," (Rural Development Institute, Brandon University, Canada, 2017), 2, <https://www.brandonu.ca/rdi/files/2017/07/RDI-Comparative-Research.pdf>.

However, academia must do more research on this vital topic because precise and unequivocal strategic communication is critical in times of crisis. With tensions rising the past decade between NATO and Moscow, the tools to manage immediate deterrence, should it occur, must be readily available.

Data Collection

The type of data comes from primary and secondary sources. The primary sources consist of *Voennaia Mysl* (Military Thought) and *Strategicheskaya Stabil'nost* (Strategic Stability). These are Russian professional journals in which prominent Russian military thinkers display their thoughts on deterrence and NSNWs. Secondary sources are reports, articles, and books by Western thinkers studying Russian deterrence.

Both primary and secondary sources provide data that addresses the first three secondary research questions:

1. Does the role of NSNW differ in utility along the conflict spectrum?
2. How does the application on the battlefield differ?
3. What are the differences between Russia and the West in nesting NSNWs in conventional forces?

Data Analysis

The process for analyzing the data consists of three steps. The secondary research questions drive the first step: selecting the content. In practice, the selection consists of reading many articles from the three Russian journals and material from the secondary sources and choosing which add value in answering the research questions. Second, the

process of coding the selected writings is one of iteration. White and Marsh succinctly describe the way coding for this thesis happened:

As he [the researcher] reads through the documents, he begins to tag key phrases and text segments that correspond to those questions, notes others that seem important but are unexpected, sees similarities in expressing the same concept, and continues iteratively to compare the categories and constructs that emerge through this process with other data and re-reading of the same documents.⁹⁰

Third, the analysis of the results formulates the answers to the three secondary research questions.

Chapter 5 has a specific, separate approach. It addresses how the identified differences affect (immediate) deterrence between Russia and the West. The approach is scenario planning. Drawing from the ideas on scenario planning from Peter Schwartz, Chapter 5 builds four scenarios in which the Russian Federation employs non-strategic nuclear weapons in a situation of immediate deterrence. In 1991, Peter Schwartz published what many consider the seminal work on scenario planning. In *The Art of the Long View*,⁹¹ Schwartz identifies eight steps to developing scenarios. Schwartz developed his ideas from the British/Dutch petroleum company Royal Dutch Shell successfully steering through the oil crisis in the 1980s. The parallel between Shell's oil crisis and immediate nuclear deterrence is that they are both about survival. Immediate deterrence during the Cuban missile crisis in 1962 was about survival due to the risk of nuclear escalation. However, there are also differences: Shell operates in the commercial sector,

⁹⁰ Marilyn Domas White and Emily E. Marsh, "Content Analysis: A Flexible Methodology," *Library Trends* 55, no. 1 (2006): 37, <https://www.ideals.illinois.edu/bitstream/handle/2142/3670/ResearchProcess.pdf?sequence=2>

⁹¹ Peter Schwartz, *The Art of the Long View* (New York: Crown Business, 1996).

whereas states operate in international politics. Acknowledging this, Chapter 5 adjusts Schwartz's steps where necessary to allow for optimized scenario planning for immediate deterrence. Schwartz's eight steps are:

1. Identify the focal issue or decision
2. Key forces in the local environment
3. Driving forces
4. Rank by importance and uncertainty
5. Selecting scenario logics
6. Fleshing out the scenarios
7. Implications
8. Selection of leading indicators and signposts⁹²

The outcome of the scenario planning presents four scenarios of immediate deterrence between the West and the Russian Federation with the employment of non-strategic nuclear weapons. It will describe the scenarios and visualize them using the 2x2 matrix technique. This technique presents four future scenarios that might materialize in due time, contrasting them on two axes. It relates to the primary research question in this thesis by assessing the implications of the research results.

⁹² Schwartz, *The Art of the Long View*, 241.

Ethical Considerations

In deterrence theory, especially when discussing nuclear weapons, academics ask two classes of questions: the first class focuses on ethics.⁹³ Is it morally acceptable to develop and operationalize nuclear weapons, increasing the risk of killing millions of human beings? Is not the risk of actual discharge due to miscommunication, miscalculation, or uncontrollable escalation unacceptable? The second class of questions addresses the effectiveness of deterrence.⁹⁴ Does it work? Does a country's power to hurt an opponent affect that opponent's decision-making process, and, more importantly, does it contribute to reducing the chance of a military conflict? This thesis deals with the latter class of questions that address effectiveness.

Summary

This chapter covered the research design. The approach is qualitative, using elements of content analysis and grounded theory. The primary sources are the Russian military journals *Voennaia Mysl* and *Strategicheskaya Stabil'nost*. Secondary sources are reports, articles, and books by Western thinkers studying Russian deterrence. The process used to analyze the data consists of three steps. The first step is selecting the content, the second is coding the selected writings, and the third step is analyzing the results and answering the three secondary research questions. The approach to Chapter 5 is scenario

⁹³ See for example Thomas E. Doyle, "Moral and Political Necessities for Nuclear Disarmament: An Applied Ethical Analysis," *Strategic Studies Quarterly* (Summer 2015): 19-42.

⁹⁴ See for example Douglas R. Ducharme, "Measuring Strategic Deterrence: A Wargaming Approach." *Joint Force Quarterly*, no. 82 (3rd Quarter 2016): 40-46.

planning. It presents four scenarios of immediate deterrence between the West and the Russian Federation with the employment of NSNWs.

CHAPTER 4

ANALYSIS

Introduction

The analysis aims to answer the three secondary research questions enabled by the theoretical framework developed in Chapter 2. The purpose of the analysis in Chapter 4 is to answer the primary research question in Chapter 5 of how differences between Russia and the West on the employment of NSNWs affect how they deter each other. The structure of Chapter 4 thus follows the order of the secondary research questions, analyzing the role of NSNWs in Russia and the West. The first part analyzes the utility along the conflict spectrum of NSNWs. Second, it looks at the battlefield application of NSNWs. The third part analyzes how they are nested in conventional forces. The last part answers the three secondary research questions. Before embarking on the analysis, Chapter 4 starts with background information on the NSNWs Russia and the West possess.

Background: Types of NSNWs

Russia possesses the largest variety of non-strategic delivery systems and the largest amount of nuclear warheads worldwide. Approximately 2,000 of Moscow's stockpile of 4,500 nuclear warheads are designed for a non-strategic delivery systems.⁹⁵ The delivery systems include ground-launched, sea-launched, and air-launched ballistic and cruise missiles with an approximate 500 to 3,000 kilometers range.

⁹⁵ Hans M. Kristensen and Matt Korda, "Russian Nuclear Weapons," *Bulletin of the Atomic Scientists* 77, no. 2 (2021): 101, DOI: 10.1080/00963402.2021.1885869.

In the West, only the United States possesses NSNWs, although France has some air-launched delivery systems that share characteristics with NSNWs.⁹⁶ For practical purposes, this part limits the overview to the United States. They currently have about 230 B61 gravity bombs, with guided air and sea-launched systems in development. Table 2 depicts the current possession of NSNWs by Russia and the United States, with the gravity bombs categorized as air-launched even though they are air-dropped.⁹⁷ Due to the limited degree to which both countries are transparent about this topic, the table has relatively high uncertainty. Nevertheless, it clearly shows the Russian advantage with this category of weapons.

Table 2. United States and Russian NSNW Types and Number of Warheads

	Ground-launched	Sea-launched	Air-launched	Stockpile
US	-	-	1	230
Russia	5	9	2	2,000

Source: Hans M. Kristensen and Matt Korda, “Tactical Nuclear Weapons,” *Bulletin of the Atomic Scientists* 75, no. 5 (2019): 253, <https://www.tandfonline.com/doi/pdf/10.1080/00963402.2019.1654273?needAccess=true>.

An example of a Russian cruise missile from each domain is the ground-launched cruise missile 9M729 with an approximate 2,000 kilometers range, the sea-launched

⁹⁶ Kristensen, “Tactical Nuclear Weapons,” 253.

⁹⁷ Table 1 is a simplified depiction of a table with the estimated nonstrategic nuclear weapons in 2019 from Kristensen, “Tactical Nuclear Weapons,” 253.

cruise missile 3M14 Kalibr with an approximate 2,000 kilometers range, and the air-launched KH-101/102 with an approximate 3,000 kilometers range respectively. Interestingly, all three of these missiles came into service roughly the past decade, indicating a high priority for dual-capable delivery systems by the Russian General Staff. With a better understanding of the types and amount of NSNWs, the chapter moves to the analysis.

Greater Conflict Spectrum Utility of Russian NSNWs than Western

The United States' forward-deployed NSNWs' role in Europe within NATO's security policy is primarily political. Academic literature indicates their role as regional or extended deterrence because they focus on a specific regional adversary: Russia.⁹⁸ In line with the more narrow perspective on deterrence, NATO states that the purpose of the mix of forces, including nuclear, is to prevent conflict and war. As noted in Chapter 2 when discussing President Biden's Interim National Security Strategic Guidance, preventing war is the realm of diplomacy.

Article 39 of the June 14, 2021, Brussels Summit Communique illustrates the political role of NSNWs in Europe. It states that "credible deterrence and defense is essential as a means to prevent conflict and war and will continue to be based on an appropriate mix of nuclear, conventional, and missile defense capabilities."⁹⁹ The article

⁹⁸ Woolf, *Nonstrategic Nuclear Weapons*, 20.

⁹⁹ North Atlantic Treaty Organization, "Brussels Summit Communique," Press Release (2021)086, last updated April 8, 2022, https://www.nato.int/cps/en/natohq/news_185000.htm.

states that “a robust deterrence and defense posture strengthens Alliance cohesion.”¹⁰⁰ It is an interesting statement because it inverts the means and the end. Logically, an alliance strengthens deterrence posture, not vice versa. Thus, with NSNWs’ role being primarily political in the West, their utility is limited to peacetime.

On June 2, 2020, the Kremlin published *On the Fundamentals of the State Policy of the Russian Federation in the Field of Nuclear Deterrence*.¹⁰¹ It clarifies that the role of NSNWs is not limited to a political tool. Point 11 states that “nuclear deterrence is carried out continuously in peacetime, during a period of immediate threat of aggression and in wartime.” The next point elaborates on which adversarial force build-up or deployment close to Russian borders poses a military threat and “for the neutralization of which nuclear deterrence is carried out:” groupings of general-purpose forces, anti-missile defense systems, medium and short-range cruise and ballistic missiles, high-precision non-nuclear and hypersonic weapons, strike unmanned aerial vehicles, and directed energy weapons.

Russian NSNWs provide the General Staff with a wide array of measures to manage escalation in neutralizing these threats before a military conflict erupts. These measures follow an escalation ladder, with a possible first step being the transportation of nuclear warheads from central storage to operational military units. A second step is deploying operational nuclear-capable military units in the field, either observable or unobservable to NATO and the United States. A third step on the escalation ladder is

¹⁰⁰ NATO, “Brussels Summit Communiqué.”

¹⁰¹ Russian Government, *On the Fundamentals of the State Policy of the Russian Federation in the Field of Nuclear Deterrence* (Moscow, Russia: The Kremlin), accessed February 9, 2022, <http://kremlin.ru/acts/bank/45562>.

maneuvering with operational units in the field. A possible fourth step is performing a demonstration: firing and detonating a nuclear warhead without damaging the adversary.

Figure 5 depicts a possible Russian escalation ladder before the formal start of a war.

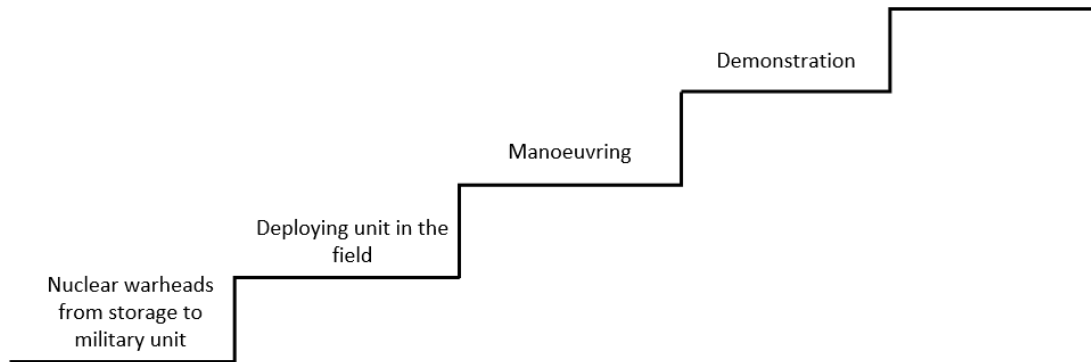


Figure 5. A Possible Escalation Ladder for Russian NSNWs before the Start of a Military Conflict

Source: Created by author.

The Russian army trains parts of this escalation ladder during military exercises.¹⁰² In 2016, the ship *Ambal* transported dual-capable ground-launched Iskandr-M Transporter Erector Launchers and missiles from St. Petersburg to Kaliningrad. Estonia accused Russia of secretly transporting them, but Russian Ministry of Defense spokesperson Igor Konashenkov said Russia “wanted the [Iskander] complex to be

¹⁰² Patrick Wintour, “Russia moving nuclear-capable missiles into Kaliningrad, says Estonia,” *The Guardian*, October 7, 2016, <https://www.theguardian.com/world/2016/oct/07/russia-moving-nuclear-capable-missiles-into-kaliningrad-says-estonia>.

spotted by the Americans.”¹⁰³ After arriving in Kaliningrad, the Iskandr unit conducted extensive combined-arms exercises with T-72 tanks, Multiple Launch Rocket Systems, BMP-2 infantry fighting vehicles, and Su-24 aircraft, likely practicing within a scenario where NATO invades Kaliningrad. Indeed, this exercise illustrates step two and step three of the escalation ladder depicted in Figure 5 and clarifies that the role of the Iskandr-M is not solely political. Lumpov and Bagmet suggest the fourth step on the escalation ladder in their article “On the Question of Nuclear Deterrence,” which Figure 6 depicts.¹⁰⁴

¹⁰³ Sergey Sikhankin, “Russia Flexes ‘Iskander’ Muscles on Its Northwestern Flank,” *Eurasia Daily Monitor* 13, no. 163 (2016), <https://www.refworld.org/docid/5800e2ba4.html>.

¹⁰⁴ V. I. Lumpov and N. P. Bagmet, “On the Question of Nuclear Deterrence,” *Military Thought*, no. 6 (2002).

Escalation Stages Strategic Deterrence Forces		Military danger	Direct military threat	Military conflict (MC) and local war (LW)	Regional conventional war (RCW)	Large-scale conventional war (LSCW)	Regional nuclear war (RNW)	Large-scale nuclear war (LSNW)
		Politico-diplomatic, Informational and economic structures						
RF general purpose forces		Detering the adversary from using military force	Detering the adversary from sudden non-nuclear aggression	Detering MC and LW from escalating into RCW	Detering RCW from escalating into LSCW	Using general purpose forces		
RF nuclear forces	Non-strategic nuclear forces	Detering the adversary from using military force	Detering from startling a sudden non nuclear aggression	Detering MC and LW from escalating into RCW	Detering RCW from escalating into LSCW	Carrying out deterrent (demonstrative and de-escalating) strikes;	Using non-strategic nuclear weapons	
			Detering from startling a sudden regional nuclear aggression	Detering from transitioning to nuclear weapons use in theater	Detering from transitioning to nuclear weapons use in theater			
		Using non-strategic nuclear forces in precision strikes						
RF nuclear forces	Strategic nuclear forces	Detering the adversary from using military force	Detering from startling a sudden non nuclear aggression	Detering MC and LW from escalating into RCW	Detering RCW from escalating into LSCW	Using strategic nuclear weapons with non-nuclear warheads		Using strategic nuclear forces in a strategic nuclear forces operation
			Detering from startling a sudden regional nuclear aggression	Detering from transitioning to using nuclear forces in theater	Detering from transitioning to using nuclear forces in theater	Detering from transitioning to using nuclear forces in theater	Detering from launching a sudden mass nuclear strike	
			Detering from launching a sudden mass nuclear strike	Detering from launching a sudden mass nuclear strike	Detering from launching a sudden mass nuclear strike	Detering from launching a sudden mass nuclear strike	Carrying out deterrent (demonstrative and de-escalating) strikes	

Figure 6. Lumpov and Bagmet’s Framework

Source: V. I. Lumpov and N. P. Bagmet, “On the Question of Nuclear Deterrence,” *Military Thought*, no. 6 (2002): 23.

NOTE: In the circle, they suggest a demonstration with a NSNW to prevent a large-scale conventional war from escalating into a regional nuclear war.

Lumpov and Bagmet’s notion of “carrying out deterrent [demonstrative and de-escalating] strikes” ties to the current debate in the West on whether Russia has an *escalate to de-escalate* concept.¹⁰⁵ In short, escalating a developing situation with a NSNW will compel an adversary to rethink its cost-benefit analysis and cease hostilities. Some authors contest the existence of this concept in debates about Russian nuclear deterrence.¹⁰⁶ Whether or not it exists, the theoretical framework from Chapter 2

¹⁰⁵ Amy Woolf, *Russia’s Nuclear Weapons*, Congressional Research Service Report for Congress, R45861 (Washington, DC: Library of Congress, last updated April 21, 2022), summary page, <https://crsreports.congress.gov/product/pdf/R/R45861>.

¹⁰⁶ For example, Olga Olikander and Andrey Baklitskey, “The Nuclear Posture Review and Russian ‘De-Escalation.’ A Dangerous Solution to a Nonexistent Problem,”

contextualizes deterrence measures as part of escalation management, which makes up the Russian deterrence characteristic of flexibility. Indeed, managing escalation implies that the Russian General Staff can either escalate or de-escalate, as long as it aims at deterring the West from continuing on the path of neglecting Russian security interests. Thus, the academic exercise of debating the existence of the Russian concept of *escalating to de-escalate* is intellectually challenging but not very useful, considering that Moscow actually can manage escalation accordingly.

In sum, Russian NSNWs provide more flexibility along the conflict spectrum than Western NSNWs even before a formal military conflict starts. However, their utility after the commencement of military hostilities is also greater than in the West, granting an even greater variety of deterrence measures for escalation management. The next part discusses the role of NSNWs in operations.

Battlefield Weapon

The history of warfare has never seen the use of NSNWs on the battlefield. The United States' use of nuclear weapons in 1945 on Hiroshima and Nakasaki was strategic: they forced the Japanese to surrender and ended the war in the Pacific. Conceptually, a NSNW with a battlefield design aims to achieve an operational objective. For example, contaminate the battlefield to slow adversarial operational tempo, destroy large concentrations of combat power, or interdict re-supply or a second echelon of maneuver units by striking reception and staging areas.

War on the Rocks, February 2018, <https://warontherocks.com/2018/02/nuclear-posture-review-russian-de-escalation-dangerous-solution-nonexistent-problem/>.

The analysis of Western doctrinal use of NSNWs on the battlefield is reasonably simple: there is none.¹⁰⁷ NATO's nuclear deterrence policy stresses "that the fundamental purpose of Alliance nuclear forces is deterrence, which is essentially a political function."¹⁰⁸ However, the 2018 United States *Nuclear Posture Review* (NPR) diverges from the decade-long reliance on gravity bombs from aircraft as the sole deterrence option. It announces the United States will "modify a small number of existing SLBM [sea-launched ballistic missile] warheads to provide a low-yield option, and in the longer term, pursue a modern nuclear-armed sea-launched cruise missile (SLCM)."¹⁰⁹ Nevertheless, the NPR does not speak of battlefield use and maintains no lower nuclear threshold for the United States despite pursuing a nuclear-capable SLCM.

In contrast, Russian military theory views an extensive doctrinal role for NSNWs on the battlefield.¹¹⁰ The principal aim of their use on the battlefield is to respond to a conventional attack from NATO and massively destroy enemy military forces.¹¹¹ Possible targets include large maneuver groupings, carrier strike groups, basing of air force assets, and command and control nodes. The recurring military exercise ZAPAD

¹⁰⁷ Tom Nichols, Douglas Stuart and Jeffrey McCausland, eds, *Tactical Nuclear Weapons and NATO* (Carlisle, PA: Strategic Studies Institute, US Army War College, April 2012), 229, <https://publications.armywarcollege.edu/pubs/2176.pdf>.

¹⁰⁸ North Atlantic Treaty Organization, "NATO's Nuclear Deterrence Policy and Forces."

¹⁰⁹ Office of the Secretary of Defense, *Nuclear Posture Review* (Washington, DC: Department of Defense, February 2018), 54, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>.

¹¹⁰ Sokov, "Russia clarifies its Nuclear Deterrence Policy," 3.

¹¹¹ Bruusgaard, "Russian Strategic Deterrence," 11.

(which means West) and a nuclear exercise on February 19, 2022, illustrate the incorporation of NSNWs in operational planning. The quadrennial strategic exercise ZAPAD tests the Operational Strategic Command-West’s capabilities. It provides the Russian General Staff with opportunities to test plans vis-à-vis NATO, experiment with new capabilities, and improve interoperability. The most recent iteration of ZAPAD, conducted from September 10 to 16, 2021, saw the inclusion of dual-capable cruise and ballistic missiles. For example, on September 13, 2021, on a training ground near Smolensk, Tu-22M3 long-range strategic bombers practiced bombing fortified underground command posts, likely using air-launched KH-101/102 cruise missiles.¹¹² Also, an Iskandr-M battalion deployed to the Leningrad Oblast simulating dual-capable cruise and ballistic missile strikes targeting command posts with Unmanned Aerial Vehicles (UAVs). The inclusion of ground and air-launched dual-capable ballistic and cruise missiles during a war scenario with NATO suggests a battlefield role for NSNWs in regional Russian operational planning.

Interestingly, the February 19, 2022, nuclear missile exercise was unique in the Russian training cycle. One can view it as a nuclear firepower display to intimidate NATO just before the start of the February 23 invasion of Ukraine.¹¹³ A remarkable

¹¹² “The crews of the aircraft of the Aerospace Forces and aviation of the Western Military District worked out the application of a massive bombing strike at an aviation training ground near Smolensk as part of the exercise ‘West-2021’,” Aviation Explorer, accessed March 20, 2022, <https://www.aex.ru/news/2021/9/13/234959/>.

¹¹³ Mark Schneider, “Putin’s Nuclear Firepower Demonstration in Support of His Invasion of Ukraine,” *Real Clear Defense*, March 1, 2022, https://www.realcleardefense.com/articles/2022/03/01/putins_nuclear_firepower_demonstration_in_support_of_his_invasion_of_ukraine_819309.html.

notion is that the exercise included four hypersonic missiles with flight speeds greater than Mach 5: two Tsirkon and two Kinzhal launches. The 3M22 Tsirkon is a dual-capable sea-launched cruise missile with a 1.000-kilometer range.¹¹⁴ The KH-47M2 Kinzhal is a dual-capable air-launched ballistic missile with a 2.000-kilometers range.¹¹⁵ They simulated attacks on ground and naval targets, likely command nodes and carrier strike groups. Even more remarkable, Russian spokesman Igor Konashenkov reported the first time ever battlefield use of a Kinzhal hypersonic missile on an underground Ukrainian ammunition depot.¹¹⁶ Indeed, the NSNWs Kinzhal and Tsirkon have a battlefield purpose besides a regional deterrent function. Even though Western media contest the significance of Konashenkov's assertion, it nevertheless suggests the Russian General Staff's emphasis on developing more flexible nuclear response options.¹¹⁷

In sum, whereas the West does not view NSNWs as a battlefield weapon, the Russian General Staff does. Conceptually, one of the principal design drivers of NSNWs

¹¹⁴ Akshai Vikram, "Russia's New Nuclear Weapons: Understanding Avangard, Kinzhal, and Tsirkon," Next Generation Nuclear Network, Center for Strategic and International Studies, August 2, 2021, <https://nuclearnetwork.csis.org/russias-new-nuclear-weapons-understanding-avangard-kinzhal-and-tsirkon/>.

¹¹⁵ Missile Threat, "Kh-47M2 Kinzhal," Center for Strategic and International Studies, last updated March 19, 2022, <https://missilethreat.csis.org/missile/kinzhal/>.

¹¹⁶ Kevin Liffey, Frances Kerry, and Helen Popper, "Russia uses hypersonic missiles in strike on Ukraine arms depot," *Reuters*, March 19, 2022, <https://www.reuters.com/world/europe/russia-uses-hypersonic-missiles-strike-ukraine-arms-depot-2022-03-19/>.

¹¹⁷ Alexander Ward and Quint Forgey, "The problem with 'hypersonic' and Russia's attack claim," *Politico*, March 21, 2022, <https://www.politico.com/newsletters/national-security-daily/2022/03/21/the-problem-with-hypersonic-and-russias-attack-claim-00018946>.

is the Russian perceived conventional inferiority vis-à-vis NATO. By prioritizing low-yield nuclear delivery systems in force management, Moscow created a more acceptable correlation of forces with the West. Additionally, they provide Moscow escalation management measures after the start of a military conflict with NATO.

Nested in the Russian Military, a Dichotomy in the US

On 24 February 2022, the day Russia initiated the ‘special military operation’ in Ukraine, President Putin warned the West not to interfere, saying “they must know that Russia will respond immediately, and the consequences will be such as you have never seen in your entire history.”¹¹⁸ Many authors and Western media interpreted these words as a threat to use nuclear weapons. Indeed, if they are correct, Putin intended to manage escalation with the West by using threatening words to influence Western decision-making and compel the West not to interfere militarily. As events unfold, one might argue Putin was successful: NATO voted against imposing a no-fly zone over Ukraine.¹¹⁹

As established in Chapter 2, the Russian conventional-nuclear integration in the military is much higher than in the West. NSNWs are organizationally, doctrinally, and technically integrated into the conventional Russian forces. In contrast, the West perceives nuclear forces as political. The extensive use of dual-capable cruise and ballistic missiles on the current battlefield in Ukraine, despite them carrying conventional

¹¹⁸ Schneider, “Putin’s Nuclear Firepower.”

¹¹⁹ Simon Lewis and Ingrid Melander, “NATO rejects Ukraine no-fly zone, unhappy Zelenskiy says this means more bombing,” *Reuters*, March 4, 2022, <https://www.reuters.com/business/aerospace-defense/nato-meets-ukraine-calls-no-fly-zone-hinder-russia-2022-03-04/>.

warheads, underscores the Russian integration. In two ways, this reinforces the blurring of offensive and defensive measures, one of the two elements of Russian preoccupation with restoring equilibrium with the West in the theoretical framework.

First, the blurring creates a potential for misinterpretation of strategic communication. From the Russian perspective, the nuclear threat of Putin aims to prevent a local war from escalating into a regional war with NATO, potentially further escalating into a large-scale war.¹²⁰ As Table 1 in Chapter 2 depicts, this logic follows Russian thought about the stages of conflict derived directly from the 2014 Military Doctrine. In essence, Putin communicates his red line: interference from NATO compels me to respond. Indeed, the Russian track record of responding when an adversary crosses a red line is credible. In 2013, Moscow deemed further alignment of Ukraine to the European Union unacceptable and intervened. In 2015, the imminent collapse of the Assad regime in Syria was a red line, and Moscow intervened again.¹²¹ Putin's nuclear threat is defensive in that he communicates a red line beyond which he must protect Russian security interests. From a Western perspective, Putin's threat is an unacceptable escalation that brings nuclear war closer. The Biden administration said that "provocative

¹²⁰ Bruusgaard, "Understanding."

¹²¹ Charap, *Understanding Russia's Intervention in Syria*, 1.

rhetoric like this regarding nuclear weapons is the height of irresponsibility.”¹²² Some even question Putin’s mental state.¹²³

Second, the conventional-nuclear integration of NSNWs reinforces the blurring of offense and defense. It is one of two elements of the Russian deterrence characteristic equilibrium, depicted in Figure 4. For Russia, military planning integrates the potential use on the battlefield of a NSNW: they can have a military offensive or defensive purpose. For example, a defensive battlefield purpose could be to halt a NATO conventional forces offensive in the Baltic Sea region. However, in the West, nuclear weapons mostly have a political purpose of preventing military conflict. Indeed, NATO views its posture as defensive, arguing that “the purpose of NATO’s nuclear capability is to preserve peace, prevent coercion, and deter aggression.”¹²⁴ Consequently, the West views as inherently aggressive and offensive behavior any Russian defensive use on the battlefield of a NSNW. The Russian conventional-nuclear integration thus further increases the risk of misunderstanding between Russian and Western intentions. In sum, the difference between Russian and Western conventional-nuclear integration blurs the intent of NSNW employment, risking misperceptions in times of increasing tensions.

¹²² Amanda Macias, “‘Height of irresponsibility:’ Blinken slams Putin’s provocative rhetoric on nuclear weapons,” *CNBC*, March 2, 2022, <https://www.cnbc.com/2022/03/02/blinken-slams-putins-provocative-rhetoric-on-nuclear-weapons.html>.

¹²³ Olivier Knox, “Some Americans (and others) are questioning Putin’s mental state,” *The Washington Post*, February 28, 2022, <https://www.washingtonpost.com/politics/2022/02/28/some-americans-others-are-questioning-putin-mental-state/>.

¹²⁴ North Atlantic Treaty Organization, “NATO’s Nuclear Deterrence Policy and Forces.”

Chapter 4 enables answering the first three secondary research questions based on the analysis. For contrast purposes, the answers are oversimplified:

- 1 Does the role of NSNW differ in utility along the conflict spectrum?

Yes, Russian NSNWs provide more flexibility in response options along the conflict spectrum than the rigid role of Western NSNWs.

- 2 How does the application on the battlefield differ?

The West does not view NSNWs as a battlefield weapon; the Russian General Staff does. Conventional Russian military inferiority vis-à-vis NATO drives this view and further enhances flexibility in response options.

- 3 What are the differences between Russia and the West in nesting NSNWs in conventional forces?

The Russian forces have a high degree of conventional-nuclear integration; Western forces have a low degree of integration. This contrast reinforces the blurring of offensive and defensive deterrence measures, increasing the risk of miscommunication and misinterpretation between Moscow and the West in times of crisis.

Chapter 5 starts with the answer to the primary research question, enabled by the answer to the three secondary research questions.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The concluding chapter consists of five elements. The first part formulates an answer to the primary research question. The second part uses Peter Schwartz's scenario planning model to examine the implications of the role of Russian NSNWs by carving out four potential scenarios in a crisis between Moscow and the West. The third part suggests recommendations for decision-makers, while the fourth part formulates recommendations for future research. The thesis concludes with some parting thoughts from the author.

Answer to the Primary Research Question

The answers to the secondary research questions enable formulating an answer to the primary research question: How do differences in Russian and Western perceptions of the employment of NSNWs affect deterrence? The differences in Russian and Western perceptions of the employment of NSNW negatively affect deterrence. The theoretical framework from Chapter 2 showed the largely rigid view on deterrence in the West, coupled with a low level of consideration for the merits of equilibrium in the Western relationship with Moscow. Russian NSNWs negatively affect deterrence because their concepts for employment differ from the West. Pre-military conflict, the Russian General Staff employs them according to an escalation ladder, whereas the West views them as having utility only when deterrence fails. During a potential military conflict, Moscow views an extensive doctrinal role for NSNWs on the battlefield. The West, however, does

not. Lastly, the high degree of Russian conventional-nuclear military integration blurs the distinction between offensive and defensive measures. The nuclear and the conventional domain, including offense and defense, separate sharply in the West. Understanding that the Western view on nuclear deterrence aims to prevent the eruption of war, the West interprets any Russian nuclear response option with a NSNW as aggressive and conveying an antagonistic Russian message. In reality, Russian signaling its security interests conveys red lines, and Western governments not understanding the Kremlin's messaging increases the chance of misinterpretation and, ultimately, the possibility of military conflict. A military conflict between nuclear powers, and worse, with Western governments insufficiently understanding the role of NSNWs in Russian deterrence, carries a significant risk of nuclear escalation. The next part explores the implication of the above conclusion looking toward the future.

Implication of Conclusion

Chapter 3 discusses Peter Schwartz's technique for scenario planning, which this part uses to explore the implication of the answer to the primary research question. In 1991, Schwartz published *The Art of the Long View*, which many consider the seminal work on scenario planning. In it, Schwartz identifies eight steps for developing a scenario:

1. Identify the focal issue or decision
2. Key forces in the local environment
3. Driving forces
4. Rank by importance and uncertainty
5. Selecting scenario logics

6. Fleshing out the scenarios
7. Implications
8. Selection of leading indicators and signposts¹²⁵

The purpose of analyzing the steps within the framework of this thesis is to develop four scenarios of immediate deterrence between the West and Moscow. Specifically, scenarios in which the Kremlin employs NSNWs. Two caveats are important. First, conducting Schwartz's eight steps for the employment of Russian NSNWs is a thought experiment. Indeed, it is an essay, or in old Middle French *essai*, which means an experiment or attempt. It does not adhere to the rigidity that usually characterizes scientific work; nevertheless, there is value in the exercise. Brown and Fehige suggest that "one reason that is often offered is that results of scientific thought experiments may be subjected to further empirical testing."¹²⁶ Clearly, within the realm of war and peace, there is value in empirical testing of scenarios involving NSNWs using military exercises as empirical data.

Second, the thought experiment describes possible scenarios in the near future; it does not predict the future. The scenarios involve nuclear war, which most prefer not to think through. Nevertheless, "denial, for example, is the first of the psychological stages that we undergo to protect ourselves from bad news."¹²⁷ Only when one postpones the

¹²⁵ Schwartz, *The Art of the Long View*, 241.

¹²⁶ James Robert Brown and Yiftach Fehige, "Thought Experiments," Stanford Encyclopedia of Philosophy, 2019, <https://plato.stanford.edu/entries/thought-experiment/#ConcCons>.

¹²⁷ Schwartz, *The Art of the Long View*, 36.

rejection of the unimaginable is it possible to contemplate what one must do if the unthinkable materializes nonetheless. The expiration date of the scenarios is difficult to determine; the fast pace at which the General Staff modernizes NSNWs and their evolving role in Russian deterrence suggests that one must redo such thought experiments within a few years.

The first step is to identify the focal issue or decision. Schwartz urges getting to the essence of the problem and considering the mindset of the decision-makers: “most of all, what is it that keeps me awake at night?”¹²⁸ The focal issue of this thesis is preventing nuclear exchange between Moscow and the West and the decisions necessary to achieve that objective.

The second step is identifying key factors influencing the success or failure of preventing nuclear exchange. The key factor for this topic is understanding what triggers the Kremlin to use a NSNW on the battlefield. More specifically, a better understanding of Russian vital security interests and the degree the West must erode them for Putin to conclude they crossed a Russian red line, resulting in the decision to inflict damage on the West using a NSNW. Indeed, capturing this mindset change is one of the more challenging and refined aspects of international diplomacy.

The third step is finding the driving forces that influence the key factors. For this thought experiment, step two only identified one key factor. Looking at the theoretical framework constructed in Chapter 2, the driving forces behind the Kremlin developing NSNWs are twofold: increasing flexibility in response options and restoring equilibrium

¹²⁸ Schwartz, *The Art of the Long View*, 242.

in Moscow's relationship with the West. However, the driving forces behind Moscow using a NSNW on the battlefield to inflict damage are threefold: the perceived necessity to manage escalation, creating a more favorable correlation of forces on the battlefield, and a pre-emptive strike when convinced war with NATO is inevitable. Schwartz stimulates the scenario planner thinking through driving forces by imagining that one beams to the future and asks oneself the question: "If only I had known that..."¹²⁹ The retrospective answer to the three driving forces behind Moscow using a NSNW on the battlefield are:

1. If only I had known that the Kremlin tried to manage escalation, I might have understood that the detonation was a mere demonstration.
2. If only I had known that the Kremlin felt so militarily inferior to consider using a NSNW to restore the balance on the battlefield.
3. If only I had known that the Kremlin felt threatened to such a degree that they actually believed NATO would execute a decapitating first strike.

Step four is to identify the most important and the most uncertain factor influencing Russian NSNWs use on the battlefield. These will function as the axes of the matrix that create contrast: the scenario drivers. The most important factor is clarity in strategic messaging because conveying the intent behind deterrence measures tends to distort when the relationship between Moscow and the West deteriorates, and tensions soar. The most uncertain factor is the Kremlin's degree of flexibility in response options

¹²⁹ Schwartz, *The Art of the Long View*, 242.

when managing escalation because the exact trigger for deciding to respond with a NSNW on the battlefield is almost impossible to determine.

Step five selects scenario logic. Drawing from this thesis’s literature review, the analysis, and the most important and uncertain factor from step four, the matrix in Figure 7 captures the dynamics of deterrence and the role of NSNWs. It depicts four scenarios, which have names that characterize them. The next step elaborates them:

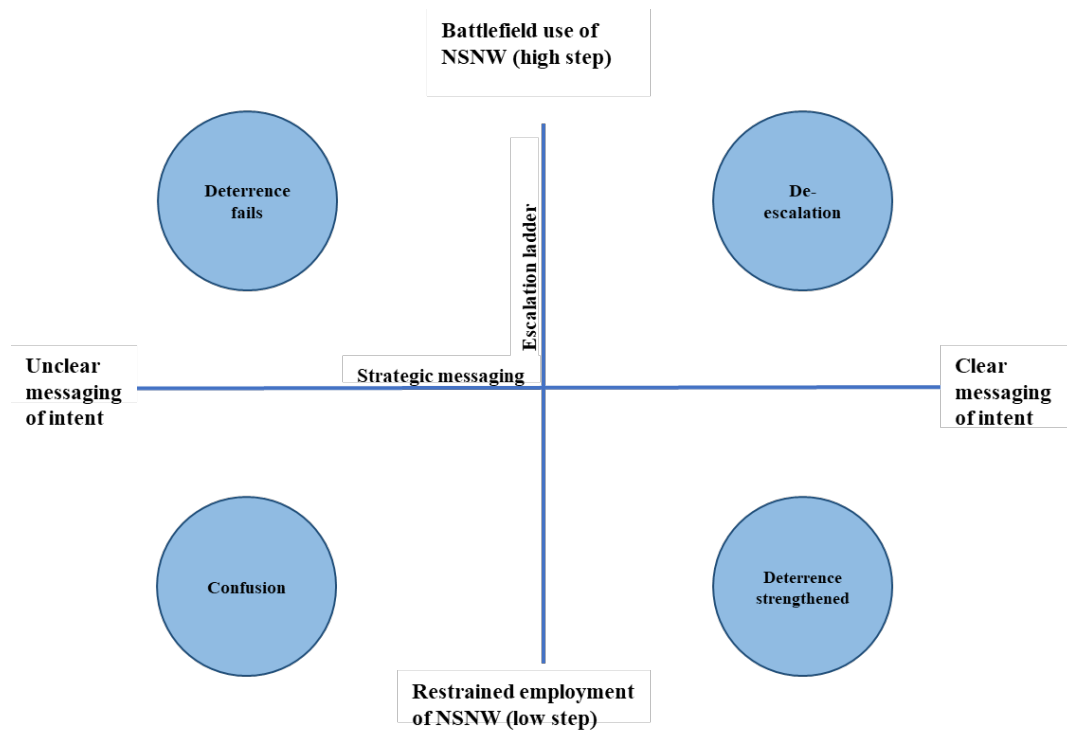


Figure 7. The Most Uncertain and Important Factors on Two Axes, Four Scenarios with a Name that Characterizes Them, Should One of Them Materialize in the Future

Source: Created by author.

Step six fleshes out the scenarios during immediate deterrence. Both NATO and Russia have mobilized a significant part of their war resources, have increased the

military's readiness, and have started projecting military power in key areas where both parties feel a decisive battle might happen. Indeed, both adversaries feel military conflict is imminent. Whereas fleshing out scenarios entails an extensive narrative, for this thought experiment, short reflections suffice:

Scenario 1: *De-escalation*

The Kremlin orders nuclear warheads transported from storage to operational units. Tactical missile brigades, bomber squadrons, and navy vessels prepare to receive them.

Simultaneously, Moscow warns NATO to defer from deploying a Tomahawk-capable carrier strike group within 2,500 kilometers, the missile's approximate firing range, of the Kremlin because they fear a decapitating first strike. NATO understands the perceived fear of a first strike among the Russian political and military leadership. Despite judging it as paranoid, NATO decides to deploy the carrier strike group at 3,500 kilometers from Moscow outside the Tomahawk firing range. Within the atmosphere of imminent war, tensions between Russia and the West slightly decrease.

Scenario 2: *Confusion*

The Kremlin orders nuclear warheads transported from storage to operational units. Tactical missile brigades, bomber squadrons, and navy vessels prepare to receive them. Simultaneously, Moscow warns NATO to refrain from deploying an additional US Army Corps near the Belarussian border because they fear for the territorial integrity of Kaliningrad and oppose further erosion of their strategic depth. NATO responds that deploying the extra US Army Corps is for defensive purposes only. They blame the

Kremlin for being hypocritical, fabricating arguments to cover up their own escalatory nuclear warhead transport. Within the atmosphere of imminent war, confusion increases regarding the intent of both parties' deterrence measures. Considering both NATO and the Kremlin blame each other for offensive measures, the risk of unintended war increases. Here, the blurring of offense and defense from the theoretical framework in Chapter 2 comes into play.

Scenario 3: Escalation

The Kremlin orders a demonstration with a NSNW, detonating it over the Barents Sea without damaging NATO territory or military forces. Simultaneously, Moscow warns that, as they perceive it, further war preparation by NATO must stop. NATO must remove its forces from the field and send them back to their barracks. NATO understands the perceived fear among the Russian political and military leadership of a Western invasion into Russia despite judging it as paranoid. For the Russian leadership, experiences in 1812 and 1941, when adversaries actually invaded Russia, rooted the fear. Nevertheless, convinced of the defensive nature of fielding its forces, NATO does not back down. Within the atmosphere of imminent war, tensions continue to escalate despite NATO clearly understanding the intent of the Kremlin's messaging. Deterrence is on the path to failure.

Scenario 4: Deterrence fails

The Kremlin perceives military conflict inevitable and orders a first strike with a NSNW on Supreme Headquarters Allied Powers Europe in Mons, Belgium. From now on, all of Western Europe will be considered a battlefield. Due to the ensuing chaos of

war erupting, Moscow fails to convey a timely and coherent message to NATO regarding the intent of their strike. NATO scrambles to respond, mobilizes further, and considers striking back with conventional or nuclear attacks. Deterrence failed. The commencement of the regional war in Western Europe forces states globally to choose sides.

Step seven considers the implications, returning to the focal issue: preventing nuclear exchange between Moscow and the West and the decisions necessary to achieve that objective. Instead of determining the required decisions to prevent nuclear exchange, an impossible enterprise, this part briefly considers the implication of the developed scenarios. First, three out of four scenarios do not result in a nuclear exchange. However, both *confusion* and *escalation* carry within them the potential to develop into *deterrence fails*. Second, even *de-escalation* involves a degree of nuclear escalation that has not occurred as of the completion of this thesis in May 2022. Thinking through *de-escalation* better prepares decision-makers for the undesirable but possible scenario of Russia increasing the operational readiness of its NSNW-forces. Last, *deterrence fails* will likely involve chaos, the degree of which restricts sound decision-making. Thinking through possible response options limits this restrictive effect of the initial phase of a war.

Recommendations for Decision-Makers

Two recommendations for decision-makers, whether politicians dealing with foreign policy or uniformed officers, derive from the analysis of the role of NSNWs in Russian deterrence. First, decisions about military measures vis-à-vis the Kremlin must show a degree of restraint. The Western interventionism over the past decades, which deployed military force beyond NATO territory for various reasons, occurred facing nonnuclear capable adversaries. This expeditionary doctrine for employing forces

required the profession of arms to be aggressive and maintain the initiative. However, a more calculating and deliberate posture from uniformed officers fits NATO's eastern flank conditions better. Restraint differs from conceding to adversarial demands. Indeed, Bernard Brodie's 1946 observation rings true again today: "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them."¹³⁰

Second, decisions must be informed better by expertise on Russian deterrence. Security thinking of the current military and political leadership, to a large degree, is shaped by stability operations and nation-building. However, the mechanisms of nuclear deterrence fundamentally differ from the security thinking of the past three decades. As this thesis showed, differences in Russian and Western perceptions of the employment of NSNWs negatively affect deterrence because the outcome of an interaction between parties with fundamental differences carries a risk of being distorted. Indeed, after meeting with Stalin in August 1945, Eisenhower said to reporters that "I see nothing in the future that would prevent Russia and the United States from being the closest possible friends."¹³¹ Understanding the Russian nuclear domain better by increasing expertise reduces the risk of the straw breaking the camel's back in times of escalating tensions.

¹³⁰ Brodie, *The Absolute Weapon*, 76.

¹³¹ Tim Weiner, "How the US-Soviet Relationship Shaped Eisenhower's Presidency," *Literary Hub*, September 25, 2020, <https://lithub.com/how-the-us-soviet-relationship-shaped-eisenhowers-presidency/>.

Recommendations for Future Research

Recommendations for future research are twofold. First, the impact of emerging hypersonic technology and maneuverable missiles deserves further study. The hypersonic speed of ballistic missiles, commonly understood as flying faster than Mach 5, is nothing new.¹³² However, the development of hypersonic cruise missiles and hypersonic glide vehicles (HGV) is. Russia is developing the Avangard HGV, which can deliver a conventional or a nuclear warhead.¹³³ The regular SS-19 “Stiletto” Intercontinental Ballistic Missile carries it to approximately 100 kilometers altitude, where it is released and then glides with an estimated speed of about 20 Mach to its target. Also, during its flight, the vehicle can maneuver. The maneuverability and the flight speed make the Avangard challenging to intercept. Chapter 4 shortly discussed the Russian hypersonic cruise missile in development: the dual-capable sea-launched 3M22 Tsirkon with an approximate 1,000-kilometer range. It is estimated to reach Mach 9 and can strike sea and land targets, making it a flexible response option vis-à-vis NATO. The important attributes of both missiles are high speed and potential maneuverability, which create challenges for intercepting them and complicate the deterrence equation.¹³⁴

¹³² Alex Hollings, “Why calling Russia’s Kinzhal a ‘hypersonic missile’ is a stretch,” *Sandboxx* (blog), March 19, 2022, <https://www.sandboxx.us/blog/why-calling-russias-kinzhal-a-hypersonic-missile-is-a-stretch/>.

¹³³ Missile Threat, “Avangard,” Center for Strategic and International Studies, last updated July 31, 2021, <https://missilethreat.csis.org/missile/avangard>.

¹³⁴ For a great discussion on these challenges, see Center for Strategic and International Studies, “Complex Air Defense: Countering the Hypersonic Missile Threat,” February 9, 2022, <https://www.csis.org/analysis/complex-air-defense-countering-hypersonic-missile-threat-0>.

Second, the impact of strengthening BMD on deterrence deserves further attention. On the surface, enhancing BMD, specifically sea-based midcourse Aegis, and the land-based component Aegis Ashore for NATO's eastern flank, have a defensive role. According to the US, their purpose is to intercept offensive ballistic missiles launched by rogue states such as Iran. However, Putin believes that is nonsense and views Aegis and Aegis Ashore as a threatening component of NATO's encircling of Russian territory.¹³⁵ Considering that credibility and perceptions play a vital role during immediate deterrence, whoever is right about Aegis and Aegis Ashore is of secondary importance.

Parting Thoughts

No topic comprises a broader range of human emotions than the topic of nuclear weapons. Some believe they bring peace and stability despite destroying two Japanese cities. Some strive to abolish them, believing a nuclear-weapon-free world is the only chance for peace and stability. Likely, the best chance for as little warfare as possible resides between these two extremes. One thing is certain: with modernization high on the priority list of an increasing number of states, nuclear weapons will play a more enunciated role in the deterrence equation in the coming years. If states can not solve this complex equation that weighs the threat perception and the vital security interests of the parties involved, the risk of nuclear escalation increases to the detriment of all. With great-power competition between the United States, China, and Russia intensifying in 2022, one ponders the balancing focal point of this modern-day trinity.

¹³⁵ Andrew Higgins, "On the Edge of a Polish Forest, Where Some of Putin's Darkest Fears Lurk," *The New York Times*, February 16, 2022, <https://www.nytimes.com/2022/02/16/world/europe/poland-missile-base-russia-ukraine.html>.

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