

Meeting the Challenges of the New Nuclear Age: U.S. and Russian Nuclear Concepts, Past and Present



Linton Brooks, Francis J. Gavin, and
Alexei Arbatov

AMERICAN ACADEMY OF ARTS & SCIENCES

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Acknowledgments

This is the first Occasional Paper of the project on Meeting the Challenges of the New Nuclear Age, an initiative of the American Academy of Arts and Sciences.

The project focuses on the dangers and opportunities presented by an increasing complex world shaped by nine states that possess nuclear weapons. The initiative addresses three dimensions of an evolving global nuclear order: 1) how the geostrategic relationships between the nuclear powers have shifted since the first nuclear age, and the impact of those changes; 2) how technological innovations (in the space, cyber, and bioweapons realm in particular, although not exclusively) are affecting existing nuclear arrangements (including the extended deterrence architecture and strategic stability); and 3) how the changes in the current global nuclear order affect the prospects for nuclear arms control, recognizing that the framework in which we are operating has changed and is increasingly challenged. The first phase of the project has concentrated on core questions generated by these changes.

This first publication, *Meeting the Challenges of the New Nuclear Age: U.S. and Russian Nuclear Concepts, Past and Present*, specifically explores the underlying principles, assumptions, and worldviews that underpinned and largely informed the complex interplay between these two nuclear superpowers during the Cold War and beyond.

We are extremely grateful to Ambassador Linton Brooks for introducing this publication and to Dr. Alexei Arbatov and Professor Francis Gavin for sharing their insights in their two fine essays. We also want to acknowledge the extraordinary commitment, talent, and expertise of the members of the project's working group.

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Robert Legvold and Christopher Chyba

Co-Chairs, Meeting the Challenges of the New Nuclear Age project,
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Introduction

Linton Brooks

In fall 2016, the American Academy of Arts and Sciences began a project on “Meeting the Challenges of the New Nuclear Age.” Over a quarter century after the collapse of the Berlin Wall and the dissolution of the Soviet Union, it is universally acknowledged that the world is in a new nuclear era, sometimes called the “second nuclear age”—but there is far less agreement on the essential nature of the new era. Indeed, for much of the past two and a half decades, the primary descriptive term for the modern period was the “post–Cold War world,” defining our era by what it was *not* because we lacked a clear understanding of what it *was*. The American Academy set out to help create the intellectual foundation needed for that understanding.

In addition to the obvious intellectual need, the Academy was motivated by its success almost sixty years ago in laying the foundation for modern arms control. As Academy President Jonathan Fanton and Project Co-Director Robert Legvold noted in their invitation to the initial members of the working group:

In summer 1960, the American Academy of Arts and Sciences convened a study group . . . to take a deep look at the challenges posed by a new and rapidly evolving nuclear era. The ideas generated by the group, captured in the volume edited by Donald G. Brennan, *Arms Control, Disarmament, and National Security*, and developed in Thomas Schelling and Morton Halperin’s *Strategy and Arms Control*, became the intellectual foundation for thinking about the revolution these weapons had produced and ways by which the dangers they posed could be managed.¹

The Academy committed itself to making a comparable contribution to understanding the modern era and assembled a diverse working group toward that end. As the working group began its deliberations, many discontinuities with the Cold War were obvious. The nuclear aspects of the Cold War were exclusively bilateral, with both superpowers regarding China as a lesser included case. Today there are multiple nuclear actors with complex and conflicting relations with one another. Cold War nuclear policies and plans were largely separate from plans for nonnuclear conflict; military planners often spoke of a future war “going nuclear” to suggest the actions after nuclear use were both different

1. Email message from Jonathan Fanton, President of the American Academy of Arts and Sciences, and Robert Legvold, Project Co-Director, to prospective participants, May 2016.

and disconnected from those that came before. Today long-range precision strike capabilities, the growing importance of space, and, especially, the implications of what is often called the cyber domain deeply influence, and are in turn influenced by, nuclear capabilities. Attitudes too have changed dramatically. Throughout the Cold War there were individuals deeply opposed to nuclear weapons who called for near-term steps toward disarmament. At least in the United States, however, the most passionate disarmament advocates had never served in government, were unlikely to do so in the future, and therefore were of limited political relevance.² Today there are dozens of former senior political appointees and military officers who endorse moving rapidly toward abolition.

While these changes are important, there are also important continuities. Two of the most significant are the American approach to thinking about nuclear weapons and the centrality of the U.S.-Russian relationship. The Cold War shaped the American concept of deterrence as well as current nuclear policy and strategy. It shaped the attitudes of most of the current nuclear policy elite, many of whom came of age during the Cold War. And it created the nuclear force structure of today. Every existing nuclear delivery system and every existing nuclear warhead in the U.S. arsenal was designed and, with minor exceptions, manufactured during the Cold War.

Similarly, while it is no longer accurate to speak of a bipolar world or to consider Russia as a superpower, Russia still matters. As a permanent member of the United Nations Security Council, Russia's cooperation—or at least its acquiescence—is vital to solving global problems like sanctions on North Korea or the crafting of the Joint Comprehensive Plan of Action (JCPOA) with Iran. Russia is the only country whose interests impinge on all three major areas of U.S. international engagement—Europe, the Middle East, and the Asia-Pacific. And it is the only country on the planet that could destroy the United States as a functioning society in an afternoon.

The essays included in this occasional paper examine these two enduring realities. In the first, Francis Gavin provides important insights into the Cold War uses of nuclear weapons beyond the deterrence of Soviet nuclear attack. Of particular importance to the modern era is his discussion of extended nuclear deterrence and alliance management.

The United States is unique in assigning nuclear weapons a significant role in the political task of managing alliances. That role is unique because the U.S. alliance system is unique. Since the end of World War II, Americans have based our approach to security on a global system of alliances, arguing we want to fight “over there” so we don't have to fight at home, even though it is often exceptionally difficult to see a direct state-level threat for which this formulation is relevant. Because of the centrality of the alliance system, both extended deterrence and reassuring allies remain fundamental to America's global approach.

2. President Ronald Reagan was a spectacular and important exception to this generalization, but for reasons extensively discussed in the literature, his long-term impact on disarmament was limited.

Extended deterrence plays a central role in U.S. nuclear thinking. Only the United States provides extended nuclear deterrence to so many allies and takes its commitment to such deterrence so seriously. NATO takes credit for the nuclear weapons of France and the United Kingdom as part of the overall nuclear capability of the alliance, but those forces are essentially national. Because of the importance of alliances, reassuring allies plays into many U.S. nuclear policy decisions. Examples abound. In 2016, the U.S. government examined adopting a “no first use” policy. Virtually all internal nuclear experts opposed it on grounds it would undercut allied confidence in extended deterrence. President Obama determined, “we can ensure the security of our Allies and partners . . . while safely pursuing a one-third reduction in deployed nuclear weapons.”³ The administration refused to make those reductions unilaterally in part because it believed maintaining nuclear forces that were roughly equivalent to those of the Russian Federation was important to our allies. The George W. Bush administration made the largest percentage reduction in U.S. total nuclear weapons in history and rejected treating Russia as a day-to-day threat. But it still sought to maintain nuclear forces that were perceived as “second to none” because of its concern with assuring allies.

Extended deterrence requires an adversary to believe we will treat an attack on an ally as an attack on the United States. Extended *nuclear* deterrence requires the belief that there is at least some chance the U.S. response will include the use of nuclear weapons, even at the risk of a nuclear counterstrike on the U.S. homeland. This was a tough sell during the Cold War, but it is an even harder sell today. In the Cold War, there were so many deployed American forces in Europe that it was impossible to believe the United States wouldn’t regard itself as under attack in any large confrontation. Further, a Soviet takeover of Western Europe would have irrevocably altered the global balance of power in a way that would have been unacceptable to the United States. Even so, American political and military leaders had to work very hard to assure allies that we would meet our obligations under Article 5 of the North Atlantic Treaty.⁴

Today extended deterrence is more complex and more difficult, because it is less certain what the stakes will be in a future crisis. Further, while any given extended deterrence crisis will almost certainly be bilateral, the new multipolar nuclear world means U.S. leaders must assess the leadership beliefs of Russia, China, and North Korea and must be able to reassure both NATO and Asian allies. During the Cold War, the United States made a huge effort to understand the Soviets and didn’t always get things right. There is less effort today to

3. United States Department of Defense, *Report on the Nuclear Employment Strategy of the United States Specified in Section 491 of 10 U. S. C.*, June 12, 2013.

4. Article 5 reads in part: “The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defense recognized by Article 51 of the Charter of the United Nations, will . . . [take] such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.”

understand any of the three potential aggressors who possess nuclear weapons. This is probably a strategic mistake.

Understanding adversaries is important. But regardless of our success, alliance management will almost certainly remain a central element of U.S. grand strategy. As a result, the United States must continue to focus on extended deterrence and allied reassurance, both of which will be more difficult than in the past. Understanding that past is crucial to shaping the future.

Understanding Russia is equally vital. In the twenty-five years since the dissolution of the Soviet Union, three successive U.S. presidents have sought to help integrate Russia into the global order and to establish a U.S.-Russian relationship that replaces confrontation with cooperation. The Clinton administration arranged for Russia to join the G-8 and worked on establishing a relationship with NATO. The Bush administration formally determined Russia was not a day-to-day nuclear threat and cooperated extensively on counterterrorism, especially nuclear terrorism. The Obama administration sought to “reset” and improve the entire relationship. These efforts all failed. While President Trump, like his three predecessors, hopes for better relations, his efforts are likely to fail as well.

Improving relations faces significant challenges. Of greatest concern is a growing Russian belief that the United States seeks to change the nature of the Russian government and that the democratic revolutions that took place in Central European states—the so-called color revolutions—were instigated by the United States and designed in part as rehearsals for similar steps against Russia in the future. A second challenge arises from Russian fears that the United States seeks a first-strike capability with respect to Russian strategic forces and that U.S. ballistic missile defense, expansion of space-based capabilities, and deployment of long-range, nonnuclear precision strike systems are all designed to enable such a capability. Long-term stability, let alone partnership, is unlikely unless the United States can dissuade Russia from these two beliefs.⁵

Because of these and other developments, instead of finding ways to improve a relationship of partnership, the United States must now focus on managing a relationship that is increasingly adversarial and confrontational. This places a great premium on understanding Russian thinking. Here the second essay in this occasional paper is vital. Academician Alexei Arbatov outlines current Russian thinking on the nuclear relationship. His articulation of differences in U.S. and Russian ways of thinking (what he refers to as their “nuclear mentality”) is especially valuable. These differences include different sources for shaping early nuclear thinking and policy in the two countries, different understandings of the appropriate military objectives were deterrence to fail, different views of the relevance of so-called stabilizing force postures in lowering the risk of nuclear war, different understandings of strategic stability, and

5. For additional discussion, see United States Department of State, International Security Advisory Board, *Report on U.S.-Russia Relations*, December 9, 2014, <https://www.state.gov/t/avc/isab/234902.htm>.

different degrees of concern with how the forces of one country are perceived in the other. These differences need to be understood in the context of broader political developments since the end of the Cold War—particularly contrasting U.S. and Russian views of NATO expansion.

Nuclear weapons continue to present a paradox. Their almost unimaginable destructiveness makes their use almost inconceivable and—for many—both immoral and unlawful.⁶ Yet many analysts and practitioners (including the present writer) believe they have played an important role in the dramatic reduction in major power wars since 1945, leading to the so-called long peace in Europe. Reconciling their horror and their utility requires a major intellectual effort. These two essays are a good place to start.

6. United Nations General Assembly, “Treaty on the Prohibition of Nuclear Weapons,” July 7, 2017, <https://www.un.org/disarmament/ptnw/A/CONF.229/2017/8>.

Beyond Deterrence: U.S. Nuclear Statecraft Since 1945

Francis J. Gavin

Nuclear deterrence theory is widely viewed as a powerful intellectual tool, developed by a unique intellectual community whose work not only shaped how we think about war and peace, but more importantly, how policy-makers, especially in the United States, crafted their own strategies.¹ Looking back, how well did this intellectual tool capture both U.S. nuclear statecraft and the global nuclear dynamics? And how useful is this tool for understanding our contemporary and future nuclear world?

The primary concept underlying nuclear deterrence theory is simple but powerful: states possessing survivable nuclear weapons are unlikely to be conquered, because no adversary would pay the potential price of its own annihilation to attempt (or even threaten) to acquire the state's territory.² During the period of intense Soviet-U.S. rivalry, some questioned whether the benefits of nuclear deterrence were worth the terrifying risk that nuclear weapons could be launched, either intentionally or by accident. On balance, however, the recent memory of a catastrophic great power war, within an international system marked by a bitter ideological clash, deep mistrust, and intense security competition, made the possibility that nuclear deterrence could provide stability and decrease if not eliminate the prospect of total war appealing. Much of the Cold War debate surrounding nuclear deterrence was less over what it was and whether it worked, but rather how many nuclear weapons, what kinds, and

1. The literature on the nuclear strategy community is large. For the best overview, see Marc Trachtenberg, "Strategic Thought in America, 1952–1966," in *History and Strategy* (Princeton, N.J.: Princeton University Press, 1991), 3–46. For more general accounts of this intellectual community, see Gregg Herken, *Counsels of War* (New York: Alfred A. Knopf, 1985) and Fred Kaplan, *The Wizards of Armageddon* (Stanford, Calif.: Stanford University Press, 1983). For a convincing critique, both of the ideas and the influence of this community, see Bruce Kuklick, *Blind Oracles: Intellectuals and War from Kennan to Kissinger* (Princeton, N.J.: Princeton University Press, 2006), especially 49–71 and 95–151. For general histories of the nuclear age, see McGeorge Bundy, *Danger and Survival: Choices about the Bomb in the First Fifty Years* (New York: Random House, 1988) and John Newhouse, *War and Peace in the Nuclear Age* (New York: Vintage Books, 1988).

2. The most powerful statement of this view can be found in Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca, N.Y.: Cornell University Press, 1989). This view can also be found in many of Kenneth Waltz's writings.

within what strategies nuclear weapons should be deployed to best realize the greatest stabilizing benefits at the lowest cost and danger.³

Does this picture of nuclear deterrence, however, capture the complex motives and strategies that drove U.S. nuclear statecraft, both during the Cold War and after?

Imagine the United States unilaterally decommissioned all of its strategic nuclear forces tomorrow. Surrounded by two oceans, facing weak countries on its borders, and possessing command of the commons and overwhelming conventional, economic, and soft power superiority, would the odds of the American homeland being invaded increase at all? It is not clear whom, in this scenario, nuclear deterrence is keeping at bay. The unlikelihood of an invasion or conquest is not simply a product of the post–Cold War world. Fifty years ago, a similar decision by the United States was unlikely to make the Soviet Union or any other potential adversary more inclined to invade and conquer the United States. In fact, by removing the need to target alerted U.S. nuclear forces, a case could be made that the overall danger to the American homeland would have decreased.

This revealing if unanswerable counterfactual is not presented to make a case for or against deterrence or disarmament. Nor is it to avoid the obvious point that the United States had and has interests and ambitions that go far beyond protecting its homeland. Rather, this hypothetical presents us with a puzzle to be explored. Few countries have or have had less need for the most important benefit nuclear deterrence provides: protection from invasion and conquest. Yet no other state has been as determined to build large numbers of weapons married to the most sophisticated delivery systems, employed in comparatively aggressive strategies, while working hard to deny independent nuclear weapons capabilities to others. Furthermore, the most dangerous nuclear crises involving the United States—the Korean War, the Berlin crisis, and the Cuban Missile Crisis—engaged political issues that were far from existential, and arguably would have been handled very differently in a world without nuclear weapons, if they had happened at all.⁴ Nuclear deterrence theories struggle to explain important parts of this international history.

3. The literature on these issues is enormous. For one of the classics in the field, see Bernard Brodie, *Strategy in the Missile Age* (Princeton, N.J.: Princeton University Press, 1959). For two important recent studies, see Lawrence Freedman, *Deterrence* (Cambridge: Polity Press, 2004) and Patrick M. Morgan, *Deterrence Now* (Cambridge: Cambridge University Press, 2003).

4. Deep in enemy territory, both President Eisenhower and President Kennedy recognized that West Berlin could not be defended by conventional forces alone, and that the threat of nuclear use by the United States was its primary tool to keep the Soviet Union and Soviet Premier Khrushchev from implementing his threats to the city. Furthermore, losing West Berlin would not alter the conventional military balance of power, but would damage U.S. credibility, the latter recognized as far more important in a nuclear than nonnuclear world. Given the limited options and their own views of the Berlin situation, it is hard to imagine either Eisenhower or Kennedy going to great lengths—like fighting a massive conventional war—to protect West Berlin in a nonnuclear world. See Francis J. Gavin, *Nuclear Statecraft: History and Strategy in America's Atomic Age* (Ithaca, N.Y.: Cornell University Press, 2012), especially 57–74.

How are we to explain these apparent puzzles and this tension between theories of nuclear deterrence and the history of American nuclear statecraft? If the United States has little fear of invasion, to what purpose does it put its nuclear weapons? Why does the United States threaten to use nuclear weapons, or to unleash a process that might lead to catastrophic nuclear use, over conflicts that are not remotely existential—such as the political status of a city deep in enemy territory fifty-five years ago, or the defense of a Baltic country or man-made islands in the South China Sea today?⁵ And what do these strategies tell us about the power and limitations of nuclear weapons? Are these insights applicable to other countries? There is very little in the classic literature on nuclear deterrence that provides satisfactory answers to these questions.

This paper will examine the concept of nuclear deterrence through the lens of the history and the grand strategic goals of the United States. I suggest strategists may have missed important elements of U.S. nuclear statecraft, both its history and the theoretical underpinnings, and underplayed deep continuities between the Cold War and the post–Cold War worlds. My point will not be to criticize earlier strategists, who built impressive deductive tools and developed keen insights into nuclear deterrence; but rather to emphasize how complex and often obscure nuclear dynamics can be, and how difficult it is to correctly identify those elements of international relations that are shaped by nuclear weapons and those that are not. There are immense challenges to making sense of nuclear politics and statecraft since 1945, some of which I will highlight below.

Finally, I will offer an admittedly basic framework to better understand American nuclear statecraft in order to capture its complex and often cross-cutting strategies and goals. This framework—labeled multiple and interactive deterrence, assurance, and reassurance (MIDAR)—attempts to capture the complex, wide-ranging missions that the United States tries to implement through its nuclear weapons strategy. As will become clear, the strategy of MIDAR is aimed at allies, adversaries, and neutrals alike, often involving basic and extended deterrence, at other times assurances, and sometimes even compulsion and coercion. Various parts of the mission have been emphasized at different times, based both on geopolitical realities and the preferences of shifting presidential administrations. Some of the missions—simultaneously deterring and assuring allies, while deterring and assuring adversaries—find themselves in deep tension. The main point of the framework is to reveal that what the United States incorporates into its overall grand nuclear weapons strategy goes well beyond the basic ideas of deterrence against invasion and conquest highlighted by early strategists and embraced by most nuclear weapons states. If nothing else, I hope to convey how much work there is still left to be done on

5. For the dangers of nuclear escalation in a conflict with China, see Joshua Rovner, “Two Kinds of Catastrophe: Nuclear Escalation and Protracted War in Asia,” *Journal of Strategic Studies* 40 (2017): 696–730; and Caitlin Talmadge, “Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States,” *International Security* 4 (4) (Spring 2017): 50–92.

topics once long thought settled: how and why the United States uses nuclear weapons, and what influence these decisions have on international relations.

CHALLENGES

There is a consensus on the core ideas surrounding nuclear deterrence and what has been called the “nuclear revolution.” A full-scale nuclear war is not winnable, especially after a state achieves what is called “second-strike survivability,” or the ability to unleash unacceptable destruction on an adversary even after absorbing a nuclear first strike.⁶ Under such circumstances, deterrence by denial is unobtainable. In other words, developing nuclear weapons, delivery systems, and strategies aimed toward prevailing in a nuclear conflict is pointless, expensive, and dangerous.⁷ Furthermore, according to nuclear revolution advocates, nuclear deterrence—including extended deterrence—is relatively robust. Since there is both uncertainty and risk in any nuclear crisis, and the consequences of getting it wrong are so horrific, both sides have powerful incentives to act responsibly. Conquest and invasion are too costly in such a world to even contemplate.

Deterrence theorists developed other concepts as well, including the framework for strategic arms control. If mutual vulnerability was the goal between nuclear pairs, then negotiated treaties might prevent other external factors from undermining the desired goal of strategic stability. Arms control would stem the action-reaction cycle of the arms race and restrain the domestic and organizational forces keen on building more nuclear weapons. Deterrence theory and the nuclear revolution also had consequences for thinking about the spread of independent nuclear weapons programs. If nuclear weapons prevent conquest and guarantee security, then one would have expected every economically and technologically advanced state to seek them. Nor should other states, especially self-proclaimed status quo powers like the United States, be unduly alarmed by nuclear proliferation, since by limiting interstate war they increased global stability.⁸

How well did deterrence theory and its natural offshoots do in predicting nuclear statecraft? It certainly got its major claim or prediction correct—great power wars of conquest have largely disappeared from the global landscape. There were dangerous crises and the risk of war between the Soviet Union and the United States, but the Cold War ended peacefully. While dangers abound, interstate relations are certainly more stable today than they were in, for example, 1930, 1870, or 1790. It is, of course, hard to prove that the nuclear revolution is responsible for decreasing large-scale interstate war; a variety of other alternative explanations, from increased globalization to norms to the increased

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

7. Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, N.Y.: Cornell University Press, 1984).

8. Various writings of Kenneth Waltz, Stephen Van Evera, and Robert Jervis.

costs of conventional war and conquest have been offered.⁹ It is hard to imagine, however, that nuclear deterrence hasn't played the central role.

On other aspects of nuclear history, deterrence theory's expectations were not met, especially in the case of the United States. While American leaders did pursue strategic arms control, they simultaneously sought expensive and potentially destabilizing counterforce nuclear systems that went well beyond what was required for strategic stability.¹⁰ American leaders often appeared to act like nuclear primacy may have conveyed important and worthwhile political leverage in international relations. Relatedly, the United States was quite or fairly active in its extensive efforts to prevent other countries from acquiring independent nuclear weapons. It applied a variety of measures, from alliances to norms to threats, addressing friend and foe alike, in its nonproliferation efforts.¹¹ This unexpectedly aggressive nonproliferation effort by the United States helps explain another aspect of nuclear dynamics—the existence of fewer than ten nuclear weapons states in the world—despite its powerful appeal and being within the technological and economic reach of scores of countries.

How do we reconcile the clear, powerful, and parsimonious predictions of nuclear deterrence theory with the complex, messy, and often obscure history of nuclear statecraft? There are at least two challenges. First, there are the methodological challenges to fully understanding nuclear dynamics and statecraft. Second, and the issue I will focus on, is recognizing and attempting to integrate the competing, parallel, and at times contradictory narratives and perspectives of the nuclear age. This is a massive and multifaceted undertaking, and the most one can do here is to highlight profitable paths for future scholarship.

METHODOLOGICAL CHALLENGES

I have written elsewhere about the methodological challenges to generating a clear and comprehensive understanding of nuclear dynamics and statecraft.¹² The obstacles are many. First, nuclear decision-making is one of any government's most secret activities. While accessing declassified documents from around the world has become easier, it is still a monumental task to piece together the various national and international histories of nuclear statecraft. Even when nuclear weapons are discussed, the language employed often is sanitized and drained of meaning, the horrors of thermonuclear use replaced by colorless euphemisms through a process Reid Pauley has aptly described as “rhetorical evaporation.”

9. See, for example, John Mueller, *Retreat from Doomsday: The Obsolescence of Major War* (New York: Basic Books, 1989).

10. Austin Long and Brendan Rittenhouse Green, “Stalking the Secure Second Strike: Intelligence, Counterforce, and Nuclear Strategy,” *Journal of Strategic Studies* 38 (1–2) (2015).

11. Francis J. Gavin, “Strategies of Inhibition: U.S. Grand Strategy, the Nuclear Revolution, and Nonproliferation,” *International Security* 40 (1) (Summer 2015): 9–46.

12. Gavin, *Nuclear Statecraft*, 17–19.

Second, what is it we are actually studying when assessing and analyzing nuclear deterrence? Nuclear statecraft is primarily concerned with what has not happened since 1945—namely, a nuclear war. Nuclear deterrence is a nonoccurrence; it is when something is prevented from happening that would have otherwise occurred in the absence of the deterrent. What this means is that it is not observable and hard to generalize upon. Scholars have often tried analyzing a variety of “proxy” phenomena, from signaling to crises to deployments, to understand the underlying causal mechanisms behind deterrence—but it is unclear whether these proxies actually tell us much about how deterrence does or does not work.

Third, it is very hard to disentangle the development of nuclear weapons and arms races from the Cold War rivalry between the superpowers and other important historical drivers of the post-1945 world. That difficulty will be discussed below. The fourth challenge, which also will be discussed below, involves separating the history of how knowledge and thought about nuclear weapons was developed—i.e., the intellectual history of the deterrence theorists—from the actual history of how states made decisions about nuclear weapons. In the past, the powerful allure of these deductive theories, which were meant to describe what scholars thought *should* happen, were inserted as explanations for what *did* happen.

There are other challenges as well. More than many areas of inquiry, nuclear studies are often marked by gaps, or distinct, often stove-piped communities that rarely interact. The think-tankers often do not engage with nuclear engineers, who rarely talk with nuclear historians, who often have few interactions with policy-makers. Within the field of international relations, divisions exist between those who use qualitative, formal, and quantitative methods, as well as with those who take constructivist approaches. Genuine and productive interactions among fields and disciplines do not happen nearly enough. Given the complexity and importance of the subject, these disconnects between scholarly communities are inefficient and disconcerting.

Finally, nuclear weapons engage deep moral considerations. Being prepared to use such weapons—even under extreme circumstances—is at the heart of deterrence. The use of these horrific weapons against people, however, is unthinkable. While the goal of guaranteeing these weapons are never used is universally shared, there is great disagreement on how to achieve that goal. Advocates of disarmament contend these are immoral weapons, and the overriding goal of policy-makers should be to permanently rid the planet of them. Deterrence advocates, while acknowledging the catastrophic prospects of use, point out that nuclear deterrence, by preventing great power war, may have saved countless millions of lives since 1945. To their minds, the disarmament position is naïve: Even if it could be accomplished, how could you prevent states from cheating? Hard as scholars try, it is close to impossible to avoid engaging normative and value judgment, which is in a way at odds with how most scientific analysis works. This can make conversations and policy debates about nuclear deterrence difficult.

COMPETING HISTORIES

To better understand U.S. policy and nuclear deterrence, we need to explore at least three distinct histories: the history of nuclear weapons development and nuclear weapons policies, the intellectual history of thinking about nuclear weapons and nuclear strategy, and the geopolitical history of international relations since 1945. These distinct histories are often mistakenly conflated, and while they are interwoven and interconnected, it is important to disentangle them as much as possible. In other words, the history of nuclear thought, which includes deterrence theory, is not the same as the history of nuclear policy and strategy. Nor is the history of the nuclear age the same as the history of the Cold War, and the history of the Cold War does not comprise all or even most of the history of international politics since 1945.

These histories are often told as the same history, however. A simplified version might go like this: for more than forty years, postwar international relations were shaped by the geopolitical and ideological struggle between the Soviet Union and the United States. This conflict was, in large measure, driven and defined by an intense nuclear arms race. These political and military dynamics were interlocked, and it was sometimes unclear whether geopolitical and ideological competition drove the arms race, whether the nuclear arms race drove the rivalry, or whether some toxic yet inseparable mix of the two were to blame. The Cold War was viewed through a nuclear lens, and nuclear weapons were framed by the Cold War, including such key events as the development of thermonuclear weapons, the Soviet launch of the Sputnik satellite, the development of intercontinental missiles, and the Berlin and Cuban Missile crises. According to this stylized narrative, strategic arms control—namely, the 1972 Anti-Ballistic Missile (ABM) Treaty and Strategic Arms Limitation Treaty (SALT) I—arrested the vicious arms race that fueled the rivalry and laid the foundation for détente, or mutual understanding, between the superpowers. Since arms control was the intellectual product of the nuclear strategists, three histories—of nuclear weapons, nuclear thinking and analysis, and international politics—merged nicely into one seamless narrative.

Except, of course, that they didn't. The Cold War rivalry was always driven by underlying geopolitical issues (sharpened, of course, by ideology), and the conflict heightened when these issues were contested and lessened when they were resolved.¹³ Détente had deeper roots than and preceded arms control. Nor could arms control prevent the reemergence of superpower hostility in the late 1970s and early 1980s. As both states continued their arms buildups, neither conformed precisely to the theories laid out by the strategists of the nuclear revolution. And the most interesting developments in nuclear statecraft in the 1960s, 1970s, and 1980s were the decisions of various states to develop nuclear

13. For the best account of the causes and relative reconciliation of the underlying geopolitical issues in Europe between the Soviet Union and the United States—namely, resolving Germany's political and military status—see Marc Trachtenberg, *A Constructed Peace: The Making of the European Settlement, 1945–1963* (Princeton, N.J.: Princeton University Press, 1999).

weapons while others eschewed such efforts. Few of those cases were motivated solely by Cold War dynamics, except in that their decisions were shaped by the unusual and unexpected efforts by the two superpower rivals to work together to staunch nuclear proliferation. The twin thrusts of decolonization and globalization, for example, were as important in shaping the global political and nuclear environments as the Cold War in the decades following World War II.

Decades later, according to standard accounts, the stylized narrative shifts again. The Cold War ends, and with it, presumably, the superpower arms race. According to most analysts, we move to a “second nuclear age” after 1989–1991.¹⁴ For some, this post–Cold War nuclear environment is far more unpredictable and unstable, if not more dangerous. So-called rogue states, with little regard for international law or norms, together with non-state actors such as terrorist groups, cannot be counted on to understand or follow the logic of deterrence, at least in the way the superpowers did. Long submerged regional rivalries are expected to emerge and develop a nuclear dynamic. Both the policy and intellectual efforts shift away from the dyadic superpower arms race to the fears of horizontal proliferation or of new actors getting nuclear weapons. Many argue for disarmament, either because of these dangers or because of the decreasing utility or relevance of nuclear deterrence or both.

Most historians recognize this stylized, monocausal history as deeply misleading. Several powerful trends and currents marked postwar international relations. Although these histories were intertwined and interconnected, the processes of decolonization, civil war, and state building in the aftermath of the collapse of the great European empires affected far more people, for both good and bad, than the rivalry between the Soviet Union and the United States. Even the process of European integration, with clear Cold War connections, had its own powerful non–Cold War drivers.¹⁵ The intensifying period of globalization that marks our own contemporary world, with massive movements of trade, money, ideas, technology, culture, and people, had its beginnings long before the Cold War ended.¹⁶ Each of these histories has a nuclear component: Does the Cold War really provide a better lens into the nuclear statecraft of Great Britain, France, Israel, or India than seismic shifts in the international system unleashed by decolonization? Did countries ranging from Brazil to Sweden to South Korea turn away from their earlier nuclear weapons programs to participate better in the globalized, open order that was emerging well before the Cold

14. Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: Henry Holt and Co., 2012).

15. Etel Solingen, “The Political Economy of Nuclear Restraint,” *International Security* 19 (2) (Fall 1994); Tony Judt, *Postwar: A History of Europe since 1945* (New York: Penguin Press, 2005).

16. For a sample of these perspectives, see Niall Ferguson, Charles S. Maier, Erez Manela, and Daniel J. Sargent, eds., *The Shock of the Global: The 1970s in Perspective* (Cambridge, Mass.: Harvard University Press, 2010); Francis J. Gavin and Mark Atwood Lawrence, eds., *Beyond the Cold War: Lyndon Johnson and the New Global Challenges of the 1960s* (New York: Oxford University Press, 2014); and Daniel J. Sargent, *A Superpower Transformed: The Remaking of American Foreign Relations in the 1970s* (New York: Oxford University Press, 2015).

War ended? This is not to dismiss the centrality of Soviet-U.S. rivalry to the postwar nuclear story, but to suggest that the politics of nuclear weapons often went well beyond a simplified and stylized narrative of the Cold War.

And what of the history of the nuclear weapons themselves and how they shaped international relations? In the past, nuclear history often has consisted of two simple stories: first, the Cold War nuclear statecraft of the superpowers, and second (and very secondary in conventional histories), the decision-making of the other seven nuclear weapons states. Because of the extraordinary increase in declassified documents available to scholars, we have a better sense of how many other states made decisions to acquire or not to acquire nuclear weapons, and how they used their nuclear status in their statecraft. For example, we now understand that the simple binary distinction between states being “nuclear” or “nonnuclear” fails to capture key elements of the story. States can pursue a range of postures, such as nuclear latency or hedging, that may generate beneficial political outcomes while still being far short of fully deployed weapons. Countries like Brazil and Japan, for example, are key parts of this nuclear history, yet we have often overlooked or misunderstood their nuclear statecraft. What is clear is that all this history, unlike nuclear deterrence theory, is messy. It blurs received historical narratives, both in terms of causes (Cold War? globalization? nationalism?) and chronology. There is but one nuclear age, which persists today, and it both drives and is shaped by the larger international forces that mark our complex world.

Finally, part of the challenge of understanding nuclear statecraft is recognizing that the same history can look different from two distinct perspectives. This is true of all political subjects, but nuclear dynamics present at least two challenges that are somewhat unique. History allows us to see things through different lenses. Let me provide two examples.

First, deterrence theory often assumes a static world in which there is a recognized status quo and a potential challenger. In any two- or multiplayer interaction, however, does everyone agree on who and what are being deterred and why? We have long associated the deterrer with the state that seeks to prevent an adversary from compelling a change to the status quo. Strategists have spent much time assessing whether nuclear weapons can or cannot be used to compel or bring about change, or whether they are only good for deterrence. But consider the most perilous period of nuclear danger in world history, the four-year period from Soviet Premier Nikita Khrushchev’s November 1958 ultimatum to the West to pull out of West Berlin until the end of the Cuban Missile Crisis in October 1962.

We now have a good sense that this four-year crisis centered upon a complex set of issues surrounding the political status of Germany and the role of nuclear weapons in its defense. The Soviets feared the United States was changing the status quo by allowing West Germany access to nuclear weapons and launched a crisis over West Berlin’s status to deter this from happening. Relatedly few observers—including Presidents Eisenhower and Kennedy—believed the “status quo” Khrushchev was challenging in West Berlin was sustainable or wise over

the long term. Putting missiles in Cuba also was a way of highlighting Soviet concerns about West Germany, in addition to deterring a possible American attack on Cuba and emphasizing what the Russians saw as dangerous nuclear missiles in Turkey. Throughout the period, identifying who was attempting to change the status quo—the compeller—and who was trying to maintain the status quo—the deterrer—was open to interpretation. Furthermore, the deterrence perspective lends an implicit moral superiority to those keeping the status quo, a position at odds with the ebb and flow of international relations before 1945.¹⁷

Equally important, however, is trying to identify the appropriate frame or lens through which to analyze nuclear statecraft and dynamics. This is the question of perspective: Are nuclear weapons and their consequences a structural, global variable that shapes state behavior, or are they best understood as tools of national state decision-making? To put it in the language of political science and the great international relations theorist Kenneth Waltz: Are nuclear weapons best understood as a second or third image factor in conflict? From which vantage point or “level of analysis” are they best studied?

The answer is, of course, that nuclear weapons must be viewed as both a national and global issue, a factor decided by particular states that shape the structure of the international environment (and vice versa). Nuclear weapons transformed international politics in profound, if at times obscure, ways. Most international behavior is shaped, sometimes explicitly but more often implicitly, by the long shadow cast by the nuclear revolution. Great power wars of conquest, which dominated modern political history until 1945, no longer make sense. The specter of nuclear use concerns the whole world: like epidemics, financial contagion, or climate change, the consequences of nuclear war cannot be limited to the adversaries in conflict. On the other hand, nuclear weapons are a tool of national strategy. Their development, deployment, and possible use are best viewed through the decision-making of the nuclear states in question. States vary dramatically in their interests and vulnerabilities, technological and economic capabilities, and political institutions and cultures. Understanding the global effects of nuclear weapons only tells us so much about why France or India developed nuclear weapons, while Sweden and Egypt did not. Nor can it tell us why the United States exploits nuclear weapons within its grand strategies in ways that are quite at odds with any other nuclear power.

17. Francis J. Gavin, “What We Talk about When We Talk about Nuclear Weapons,” *International Security Studies Forum* (2) (June 15, 2014): 11–36, <https://issforum.org/ISSF/PDF/ISSF-Forum-2.pdf>.

AMERICAN NUCLEAR STRATEGY AND STATECRAFT:
MULTIPLE AND INTERACTIVE DETERRENCE, ASSURANCE,
AND REASSURANCE (MIDAR)

Is there any way to overcome these obstacles and challenges and have a better understanding of nuclear statecraft? For example, can we generate better frameworks to understand how and why the United States has made policies about nuclear weapons and incorporated them into its grand strategies since 1945?

We know the deductive models from nuclear strategists explain some things but not others. Traditional nuclear deterrence theory identifies the power to prevent another state from invading and conquering your homeland as the most powerful and appealing characteristic of possessing nuclear weapons, especially if these weapons are designed and deployed in such a way as to avoid being eliminated in a preemptive attack. Avoiding invasion and conquest, however, has not been a real fear of the United States since at least the American Civil War, if not before. Why then has the United States made nuclear weapons such an integral part of its grand strategy? And why has it pursued nuclear weapons in numbers and delivery configurations, and often employed in aggressive strategies, that go well beyond what is needed to deter any potential adversary crazy enough to threaten the American homeland?

Ironically, what is often missed in the strategic studies literature dominated by American thinkers is that the United States has sought to achieve far more ambitious goals than simply deterrence with its nuclear weapons. These vast goals include a complex mix of often cross-cutting objectives oriented at deterring, assuring, reassuring, and competing with adversaries, allies, and neutral countries. Eight missions in particular are crucial drivers of what might be thought of as multiple and interactive deterrence, assurance, and reassurance missions (MIDAR):

1. Deter adversary(s) from attacks on the homeland, but also deter attacks by adversary(s) against an ally, even in geographically distant regions.

The United States provides a security guarantee and/or extended deterrence to dozens of countries. This policy promises that the United States will protect those states under its “nuclear umbrella” by responding with force if the state in question is attacked, even if it means the United States has to use its own nuclear weapons and expose itself to nuclear attack from another state.

2. Deter allies from acquiring their own independent nuclear forces.

The United States has threatened allies with a number of measures, from abandonment to sanctions, if they develop their own independent nuclear capability. This mission is rarely discussed in public, given the sensitivity involved in suppressing the ambitions of otherwise allied countries.

3. Deter neutral and independent countries from acquiring their own nuclear forces.

The United States would greatly prefer that no other state than itself have nuclear weapons, as ambitious or perhaps unrealistic as that goal may be. It has far less leverage over states that are neither adversaries, whom it can target, or allies, whom it can coerce and/or assure, than independent states. Still, the United States makes it clear that it will impose costs on any state that seeks nuclear weapons.

4. Assure allies you will neither abandon them *nor* pull them into a conflict they don't want.

Many U.S. allies, especially in Western Europe and East Asia, faced grave dangers during the Cold War; new dangers have arisen in both regions in recent years. The United States deploys its nuclear weapons to assure its allies that it will protect them against threats, but not act so belligerently or aggressively as to provoke a conflict in which they would be on the front lines.

5. Assure independent and neutral countries that the United States will strive to create an international environment that decreases the perceived need and appeal of independent nuclear weapons.

Nuclear weapons can provide extraordinary benefits to states that acquire them. How do you best assure a state that, either by its own or U.S. preference, is not protected by the United States to forgo nuclear weapons? Assurance is guaranteed by both avoiding threatening that state with conquest or invasion, and by supporting international norms, practices, and institutions that discourage interstate war.

6. Reassure adversary(s) you will deter and/or restrain your allies.

The United States, alone or at times in collusion with its adversary, has sought to keep its allies nonnuclear. Some of these allies had been aggressors in earlier wars or had reason to challenge the territorial status quo; the United States, through its security guarantees, seeks to implicitly signal to the adversary that it would restrain these countries.

7. Reassure adversary(s) and neutrals that the capabilities you seek to deter adversaries and assure allies are not oriented toward first-strike capabilities, even as you seek nuclear primacy.

The United States could not accomplish the ambitious goals of extended deterrence, inhibition, and assurance by simply accepting parity with its adversary. It would not be credible to assure allies they were secure and deter them from acquiring their own nuclear weapons if the United States blithely accepted vulnerability to a

nuclear attack from the adversary. On the other hand, the United States wants to avoid the destabilizing conditions of a full-out effort to achieve a meaningful first-strike capability and strategy, even as it seeks some form of nuclear primacy.

8. Compete with and potentially defeat an adversary without recourse to war.

The United States wants to avoid a nuclear exchange or a conventional conflict that could escalate into a nuclear war with its adversary(s). It also recognizes the costs and potential dangers of the nuclear arms race. At various times, however, it believed it possessed technological and economic advantages that allowed it to pursue sophisticated nuclear weapons and delivery systems to pressure its adversary, even when they threatened strategic stability. The United States also appeared to believe there were meaningful coercive benefits to conditions of nuclear superiority short of a first-strike capability.

A few important observations about this complex mission are in order. First, this proposed framework for multiple and interactive deterrence, assurance, and reassurance should be understood as a heuristic framework. It is a rough and incomplete cut at how we might think about why and how the United States pursued the nuclear statecraft that it did. Like any heuristic, it does not fully capture the nuance and context of the history of U.S. nuclear statecraft. It is easy to think of many U.S. behaviors or policies that are not explained by or even contradict this analysis. Nor does it capture the fundamental importance of various bureaucratic, organizational, and domestic political forces that shaped nuclear decision-making over the past eight decades. Finally, this framework is not especially sensitive to the shifting preferences of different presidential administrations or changes in the international system. It may, however, provide insight into why U.S. nuclear statecraft seems at odds with the predictions of much of nuclear deterrence theory.

Second, many of the goals enumerated above are in tension if not at outright odds with each other. This means that American nuclear statecraft required and continues to require careful and constant calibration to achieve what might be thought of as a complex deterrence/assurance/reassurance equilibrium. Putting too great an emphasis on reassurance to an adversary, for example, can weaken deterrence toward that adversary and undermine assurance to allies. But assuring allies too much might undermine reassurance of the adversary and fail to deter the ally. There are, obviously, many combinations and policy strands that have to be delicately balanced. One of the advantages of this framework, however, is that it captures the deep but often hidden connection between U.S. nuclear strategy and American nuclear nonproliferation goals. Much of the writing on nuclear strategy focused on U.S. competition with its adversary, the Soviet Union. Containing, deterring, and, for some, bankrupting the Soviet Union was, of course, a most important goal of America's nuclear strategy. The United States also employed nuclear statecraft as part of its grand strategic goal

of limiting the proliferation of independent nuclear weapons states, a goal that was missed by many early nuclear strategists. It is also a goal that continued and was even elevated when the Cold War ended, explaining why there was far more continuity in U.S. nuclear statecraft after the demise of the Soviet Union than most scholars anticipated.

Third, this appears to be a uniquely American story. Every other nuclear weapons state save one appears to have acquired nuclear weapons largely if not solely because of its ability to prevent invasion and conquest. Even the Soviet Union, with nuclear forces at times as large, sophisticated, and within equally destabilizing postures, seemed primarily concerned with avoiding invasion and more often than not appeared to mimic U.S. decisions rather than develop unique strategies. Ironically, the main insights of nuclear deterrence theory, which were developed by American strategists, explain the nuclear statecraft of other states far better than the United States.

Fourth, this framework captures some of the more puzzling aspects of the history of U.S. nuclear statecraft. For example, MIDAR helps explain why the United States worked at various times during the Cold War with its greatest adversary, the target of its nuclear forces, to limit the spread of nuclear weapons to other countries, even America's allies.¹⁸ It also provides insight into the puzzling question of why the United States began a massive investment in counterforce weapons soon after signing SALT I and the ABM Treaty. Through SALT and ABM, American policy-makers seemed to accept mutual vulnerability with the Soviet Union and that seeking nuclear primacy was wasteful and potentially destabilizing. The United States spent hundreds of billions of dollars on nuclear weapons, delivery systems, and auxiliary capabilities that focused on speed, accuracy, and stealth—qualities unlikely to be prioritized if the goal was to possess enough nuclear firepower to cause unacceptable damage to an adversary even after it had launched a nuclear attack.

CONCLUSION

In the 1950s and 1960s, American strategists created a powerful intellectual architecture to explain how nuclear weapons influence international relations and what strategies and policies could be enacted to take full advantage of the benefits of nuclear deterrence while minimizing the risks. Scholars in the decades since built upon this legacy to understand nuclear strategy, proliferation, and nonproliferation.

This framework, based largely on deductive reasoning, offered important insights into how to think about nuclear weapons. But it also missed many of the complexities of nuclear statecraft. This is not surprising—as we have seen, understanding nuclear policy is challenging. But as we think about future

18. Andrew J. Coe and Jane Vaynman, "Collusion and the Nuclear Nonproliferation Regime," *Journal of Politics* 77 (4) (October 2015).

research, it is important to highlight some of the shortcomings of the original deterrence framework.

First, disentangling nuclear history from other important drivers of world politics, while difficult, is crucial. One implication is to disconnect the idea that there was a distinct nuclear age that coincided with the Cold War and disappeared when the Soviet Union collapsed, giving birth to a second nuclear age. There have been continuities and discontinuities in nuclear history since 1945, but it may be more useful to talk about one nuclear age, which we are still in.

Second, analysts have separated the study of nuclear strategy (what states do with their nuclear weapons) from issues of nuclear proliferation (why states do or do not acquire nuclear weapons) and nuclear nonproliferation (how and by whom states are constrained in their nuclear ambitions). The history of nuclear statecraft clearly demonstrates these three separate issues are interrelated and cannot be fully understood in isolation from each other.

Third, there is the question of perspective, or the lens we use to understand nuclear dynamics. Nuclear weapons are primarily one of the tools states use to accomplish their goals in the world. In other words, nuclear weapons policy can only be understood as a part of a particular state's grand strategy: what a state wants to achieve in the world and how. On the other hand, nuclear weapons and their consequences cast a shadow that spills over national borders. The use of these weapons, or even their threatened use, has global consequences, and the whole structure of international relations since 1945 has been transformed by the nuclear revolution. When studying nuclear statecraft, how do we reconcile profoundly different national perspectives with the universal experience of living under a nuclear sword of Damocles?

Finally, we need to reassess how the United States has thought about and deployed nuclear weapons. On one level, this is problematic—an overly American perspective in nuclear studies and deterrence may have obscured much of the complexity behind the nuclear statecraft of other countries. American scholars have also dominated our discussions of nuclear dynamics, often generalizing from U.S. experiences that are hardly applicable to other countries. That said, the United States has been and will remain the proverbial “eight-hundred-pound gorilla” on nuclear issues. And, as we have seen, its own behavior and policies are puzzling, at least from the perspective of the (American) school of deterrence. From the earliest days of the nuclear age, the United States, unlike others, sought to do far more with nuclear weapons than merely exploit their power to deter invasion and conquest. Over time, it developed a complex mix of deterrence and assurance toward allies, adversaries, and neutrals. More research needs to be done to better understand this mix, and to what grand strategic purpose.

Challenges of the New Nuclear Era: The Russian Perspective

Alexei Arbatov

In a 2012 newspaper article outlining his platform for the Russian presidential election, Vladimir Putin stated, “We will under no circumstances surrender our strategic deterrent capability, and indeed will in fact strengthen it. . . . As long as the ‘powder’ of our strategic nuclear forces . . . remains dry, nobody will dare launch a large-scale aggression against us.”¹ Putin’s promise is being implemented ambitiously under the 2020 state armament program, which is aimed at deploying about four hundred new strategic ballistic missiles, eight nuclear-powered ballistic missile submarines, and new systems of heavy bombers and air-launched cruise missiles.²

But on October 24, 2014, while speaking at a Valdai forum in Sochi at the peak of the Ukrainian crisis, Putin suddenly declared, “The fewer nuclear arms in the world—the better. We are ready for most serious talks on the nuclear disarmament issues, but for serious talks—without double standards.”³ Three months later, at the session of the Russian Federation Military-Industrial Commission, he warned, “We see other states . . . actively building up and perfecting their military arsenals. . . . We can and must respond to this challenge, but, as I said earlier, without being drawn into an expensive arms race.”⁴ Strictly speaking, Russia’s widely advertised strategic program cannot be qualified as an arms race—if only because for the time being no other nation can claim the role of a counterpart to this competition—but undoubtedly it is a massive and expensive, even if one-sided, modernization of the nuclear arsenal.

1. Vladimir Putin, “Byt’ sil’nymi: garantiinatsional’noi be-zopasnostidlyaRossii” [Being Strong: National Security Guarantees for Russia], *RossiiskayaGazeta*, February 20, 2012, <http://rg.ru/2012/02/20/putin-armiya.html>.

2. Ibid.

3. “Meeting of the Valdai International Discussion Club,” Official Internet Resources of the President of Russia, October 24, 2014, <http://en.kremlin.ru/events/president/news/46860>.

4. “Meeting of the Military-Industrial Commission,” Official Internet Resources of the President of Russia, January 20, 2015, <http://en.kremlin.ru/events/councils/by-council/41/47493>.

Among many puzzles surrounding President Putin's foreign and defense policy-making, the ones related to nuclear arms are the most intriguing and crucial in their implications for the new nuclear era of the twenty-first century. The reason behind this is that Russia, together with the United States, possesses more than 90 percent of the world's nuclear weapons and materials; it is engaged directly or indirectly in many global and regional missile and anti-missile rivalries; and it is involved in all principal talks and regimes of arms control and nonproliferation.

This essay begins with a general overview of the latest official threat perceptions of Moscow. It then analyzes Russian estimates of the principal new challenges affecting strategic relations among states. Finally, the essay turns to Russian-specific thinking about nuclear deterrence, with a particular focus on generic differences with that of the United States.

This last topic has been largely ignored in the open literature in both Russia and the United States. In the West there is a tradition of explaining Russian behavior by projecting Western thinking onto Russian defense planners, which often leads to conclusions about Russia's threatening character. However, the core of the problem is that Soviet/Russian nuclear mentality has most of the time been largely or totally different from that of the United States and its allies, although those differences and their origins have never been properly understood by either side. This deficiency needs to be corrected; otherwise it may lead to deadlocks in the arms control process and to potentially dangerous collisions in crisis situations.

GENERAL THREAT PERCEPTIONS

The challenges of the nuclear age of the twenty-first century were comprehensively sketched by Robert Legvold, a patriarch of American foreign policy and political science:

An arms control regime in trouble is one thing; the incapacity or unwillingness of the two nuclear superpowers to begin grappling with the dangers posed by this new era—dangers that are far more complex than those of the Cold War era—is quite another. . . . The United States and Russia, in modernizing all three legs of their nuclear triads, have reopened a potential competition between offensive and defensive systems and introduced new destabilizing technologies, such as conventionally armed strategic missiles theoretically capable of striking the other side's nuclear weapons, thus blurring the firebreak between conventional and nuclear warfare. They are no longer alone. Other duos, in highly volatile relationships, such as India and Pakistan, are pressing ahead with ambitious nuclear programs, aspects of which, such as Pakistan's extensive short-range missile buildup and doctrine for use, carry great risks. India's determination to build the world's

third triad of nuclear delivery vehicles, including advanced generation MIRVed ICBMs, means the country is moving beyond minimum deterrence. It and China, whose own programs are advancing in all of these categories, are headed for a strategic arms competition. This in turn will create an enormously complicated trilateral India-Pakistan-China nuclear relationship, which will in turn intersect with a potentially fraught Russia-U.S.-China nuclear triangle. Superimposed on this maze are trends, including warfare's new cyber front, threatening traditional notions of nuclear deterrence and creating dangerous ambiguities over conventional military actions that could be read as a prelude to a nuclear attack.⁵

Russian perceptions of these issues are very different from American ones, as evidenced by the latest versions of the Russian Federation Military Doctrine (MD-2014) and Strategy of National Security (SNS-2015).⁶ According to the MD-2014 priorities of "military dangers and military threats," the main external challenges emanate from the buildup of NATO military power, the globalization of its functions, the extension of its membership and military infrastructure toward Russian borders, and the deployment of foreign armed forces in the territories bordering Russia and its allies. The challenges also include the development and deployment of strategic missile defense systems, the implementation of the concept of "global strike," plans for weapons deployment in space, the development of high-precision strategic nonnuclear arms, and the territorial claims on Russia and its allies (points 1–5).

After these challenges there is a reference to the threats that have been the main priority of the West since the end of the Cold War, at least until the Ukrainian crisis: proliferation of the weapons of mass destruction, missiles, and missile technologies (point 6); and international extremism, terrorism, transborder crime, and terrorist acts with the use of radioactive and chemical materials (point 10). In between and without elaboration, MD-2014 refers to the violation by some states of international agreements and noncompliance with earlier concluded agreements on arms prohibition, limitation, and reduction (point 7).

In listing priority threats facing Russia, the SNS-2015 does not differ from the MD-2014 in any significant way. Nonetheless there are several notable features that reflect Moscow's contemporary security priorities. One is the significant increase of domestic political concerns, which obviously follows from the 2011–2012 scare of mass protests in large Russian cities and the Ukrainian revolt of 2013–2014. These threats are seen as emanating from foreign intel-

5. Robert Legvold, *Return to Cold War* (Malden, Mass.: Polity Press, 2016), 132. MIRVed ICBMs are multiple independently targetable reentry vehicle (MIRV) intercontinental ballistic missiles (ICBMs).

6. "Voennaya doktrina Rossiiskoi Federatsii" [Military Doctrine of the Russian Federation], *Rossiiskaya Gazeta*, December 30, 2014, <http://rg.ru/2014/12/30/doktrina-dok.html>; "Ukaz Prezidenta Rossiiskoi Federatsii ot 31 dekabrya 2015 goda N 683 'O Strategii natsional'noi bezopasnosti Rossiiskoi Federatsii'" [Edict of the President of the Russian Federation of 31 December 2015, No. 683, "On the National Security Strategy of the Russian Federation"], *Rossiiskaya Gazeta*, December 31, 2015, <http://rg.ru/2015/12/31/nac-bezopasnost-site-dok.html>.

ligence and public organizations' subversive activities, information warfare "aimed at violent change of the constitutional state, destabilization of domestic political and social situation, and disorganization of the functioning of state power agencies, important state military sites, and information infrastructure."

In contrast to Legvold's panorama, commonly accepted in the West, the threats emanating from the states' nuclear arms—traditionally the first Cold War priority—are absent, as well as the dangers associated with a nuclear arms race. The same is true of the threat of nuclear war by technical failure, political/strategic miscalculation in a crisis, or escalation of a local conventional conflict to a local or global nuclear war. Russian military and political thinking largely ignores the possibility of an outbreak of a war as the result of the uncontrolled escalation of a military action-reaction sequence. One of the few exceptions is a paragraph in the *Foreign Policy Concept of the Russian Federation* adopted in November 2016, but in stating such a possibility it does not specify in which region or between what nations such escalation might happen. In particular, there is no mention of such dangers in Ukraine, South Asia, the Middle East, or the Far East.⁷

Whenever nuclear arms are mentioned (other than in the context of proliferation), they are presented in a highly positive way: "Nuclear weapons will remain an important factor of prevention of nuclear military conflicts and military conflicts with the employment of conventional strike systems (in large-scale and regional wars)." The most striking recent statement on the subject portraying nuclear weapons in a totally idealistic manner came from Putin in his remarks to the Valdai Club in October 2016: "Nuclear arms are a factor of deterrence and a factor providing for peace and security in the whole world. . . . It should not be considered as a factor of aggression."⁸

The danger of nuclear weapons surfaces sporadically and only indirectly in the Russian official position, for example, in reference to the planned deployment of U.S. Aegis Ashore ballistic missile defense (BMD) interceptors in Romania and Poland, which allegedly may be replaced in their launchers by nuclear Tomahawk cruise missiles. (This implies either denial or ignorance of the fact that nuclear submarine-launched cruise missiles [SLCMs] were removed from service and dismantled beginning in 2012.)⁹

As for nuclear arms control, the only point mentioned is "compliance by the Russian Federation with international treaties on reduction and limitation of missile-nuclear arms." No follow-on steps are envisioned, except for the conclusion of a treaty on nondeployment of arms in outer space and the elabo-

7. The Ministry of Foreign Affairs of the Russian Federation, *Foreign Policy Concept of the Russian Federation (Approved by President of the Russian Federation Vladimir Putin on November 30, 2016)*, December 1, 2016, http://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptlCk6BZ29/content/id/2542248.

8. "Meeting of the Valdai International Discussion Club," Official Internet Resources of the President of Russia, October 27, 2016, <http://en.kremlin.ru/events/president/news/53151>.

9. Dmitry Gorenburg, "MCIS 2017 Missile Defense Slides," *Russian Military Reform* (blog), May 8, 2017, <https://russiamil.wordpress.com/2017/05/08/mcis-2017-missile-defense-slides/>.

ration of a control mechanism for the bacteriological weapons convention. This impression is strengthened by another point (number 101) that addresses the prospects of the Strategic Arms Reduction Treaty (START) Follow-on: “In its relationship with the international community the Russian Federation is relying on the principles of preserving stability and predictability in the area of strategic offensive arms. The practical realization of such relationships is facilitated by compliance with the achieved agreements on the reduction and limitation of strategic offensive arms and the elaboration, *if needed*, of new agreements in this area.”¹⁰ Other nuclear arms states are mentioned cautiously: “The Russian Federation is promoting the involvement of other states, first of all those possessing nuclear weapons, and those interested in the joint effort to provide for common security in the process of providing for strategic stability” (point number 102).

Lastly, the threat of cyberwarfare and terrorism, which is very much in the center of attention in the West, is at the periphery of Russian security concerns. Because of the fear of “color” revolutions, the primary alarm is associated with the information warfare’s influence on domestic politics, not with cyberattacks on strategic C3I systems (Communications, Command, and Intelligence) that could provoke an inadvertent nuclear exchange between great powers. The MD-2014 document states as a security requirement “the creation of conditions, providing for reducing the risks of the use of information and communication technologies for military-political goals . . . directed against the sovereignty, political independence, territorial integrity of states.”¹¹ It is a historic irony that after the U.S. presidential election of 2016 this type of informational subversion has become the major American national security concern, as if borrowing from Russian official threat perceptions of previous years.

As for Russian nonofficial or quasi-official views, the conservative and right-wing majority of military and civilian experts flatly reject any further nuclear arms control, openly question the value of the Intermediate-Range Nuclear Forces (INF) Treaty, and go as far as to advocate withdrawal from the New START, the Comprehensive Nuclear-Test-Ban Treaty (CTBT), and even the Nuclear Nonproliferation Treaty (NPT).¹² In the recent writings of strategic experts from think tanks affiliated with the Russian Ministry of Defense or directly functioning in its domain, some new concepts have emerged that provide serious reasons for concern. For example, Konstantin Sivkov, one of the most prolific authors on strategic matters, claimed that after the deep reductions of nuclear arms since 1989, an all-out nuclear war between the United States and Russia would not be a global catastrophe—entailing an aggregate explosion of “only” fifty to sixty megatons, which would constitute less than half of

10. “Ukaz Prezidenta Rossiiskoi Federatsiiot,” *Rossiiskaya Gazeta*, December 31, 2015 (emphasis added).

11. “Voennayadoktrina Rossiiskoi Federatsii,” *Rossiiskaya Gazeta*, December 30, 2014.

12. Sergei Brezkun, “Dogovory dolzhny soblyudat’sya, no–lish’ s dobrosovestnym partnerom” [Pacta Sunt Servanda, but with Responsible Partners Only], *Nezavisimoe Voennoe Obozrenie*, August 22, 2014, http://nvo.ng.ru/concepts/2014-08-22/4_dogovor.html.

the Krakatau volcano eruption (1883) or just one Soviet super-bomb test over Novaia Zemlia (1961).¹³

Another novelty is promoted in relation to a possibility of limited use of Russian strategic nuclear arms as a response to NATO conventional airspace attacks (analogous to scaled-up campaigns against Yugoslavia in 1999 or Iraq in 2003). In particular, a group of military experts from one of the Russian Ministry of Defense institutes wrote:

The main peculiarity is the limited nature of the initial nuclear impact, which is designed not to embitter, but to sober the aggressor, making it stop the attack and get down to negotiations. In the absence of such reaction it is envisioned to escalate the massiveness of nuclear weapons employment in numbers and yield. Hence, it is assumed that the first nuclear use by the Russian Federation is limited. The opponent's reaction is calculated both as a massive and as a limited nuclear strike. The second in our view looks more probable. After all it was the United States where the concept of a limited nuclear war was born.¹⁴

A liberal minority of the strategic community advocates negotiations on the START Follow-on, confidence-building measures, and eventual joint development of BMD systems, abandoning hair-trigger alert postures of strategic forces and limitation of advanced long-range conventional arms and tactical nuclear weapons.¹⁵ However, the sheer number of hawkish publications and television statements (allegedly with tacit approval from the top) drowns out such opinions and professional estimates.

STRATEGIC THREAT ASSESSMENTS

In Moscow the main threat is perceived as coming from the U.S. deployment of a global BMD system with regional segments in the Euro-Atlantic and Asia-Pacific regions. Despite Russian objections, the United States has refused either to consider a joint anti-missile system or to accept “legally binding commitments” (implying technical limitations) guaranteeing the system will not be aimed at intercepting Russian missile forces.

13. Konstantin Sivkov, “Razoruzhen i ochen' opasen” [Disarmed and Very Dangerous], *Voenna-Promyshlennyyi Kur'er*, March 22–28, 2017, <http://vpk-news.ru/articles/35718>.

14. Dmitrii Akhmerov, Evgenii Akhmerov, and Marat Valeev, “Aerostat–drug ‘Sarmata’” [Aerostat Is a Friend of “Sarmat”], *Voenna-Promyshlennyyi Kur'er*, October 12, 2016, <http://vpk-news.ru/articles/32887>.

15. Alexei Arbatov, “Kontrol' nad yadernym oruzhiem: konets istorii?” [Nuclear Arms Control: The End of History?], *Mirovaya Ekonomika I Mezhdunarodnye Otnosheniya* 5 (2015): 5–18, <http://elibrary.ru/download/59116799.pdf>; Vladimir Dvorkin, “The Prospects for Cooperation between the U.S./NATO and Russia on BMD,” in *Missile Defense: Confrontation and Cooperation*, ed. Alexei Arbatov and Vladimir Dvorkin, English version ed. Natalia Bubnova (Moscow: Carnegie Moscow Center, 2013), 204–225, http://carnegieendowment.org/files/Missile_Defense_book_eng_fin2013.pdf.

The plans announced by the United States in 2013 are well known.¹⁶ The deal on Iranian nuclear activities concluded in July 2015 has not addressed Tehran's missile program, and hence the U.S./NATO BMD deployment plan has not been curtailed. This provoked Moscow's self-righteous indignation, expressed by Putin at a Valdai forum in Sochi in 2015:

Under the pretext of a nuclear-missile threat of Iran, as we know, the foundation of contemporary international security was destroyed—the Anti-Ballistic Missile Treaty. The U.S. unilaterally withdrew from it. By the way today the Iranian nuclear problem has been resolved. . . . The reason that had allegedly caused our American partners to build a ballistic missile defense system has disappeared. We might expect that the work on the U.S. BMD would stop. But what do we see in reality? Nothing like that happens; on the contrary—everything goes on. . . . We and the whole world have been misled. To put it bluntly—we were deceived.¹⁷

In this regard, the analysis by U.S. and Russian experts of U.S. missile defense system capabilities in Europe has provided ample evidence of meager capabilities of this system against Russian strategic forces.¹⁸ There is no doubt that Russian intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) are sufficiently numerous, survivable, and equipped with effective BMD penetration aids.

It is impossible to know for sure whether the Russian political leadership sincerely believes in the threat from the BMD system of the United States and its allies in Europe and the Pacific. Virtually all retired military and civilian professionals agree that present and projected Western anti-missile defenses are unable to weaken the Russian strategic nuclear capability.¹⁹ It is possible to assume, however, that currently serving military commanders are trying to adjust their estimates to what they assume are the perceptions of the political

16. The United States planned to deploy midcourse ground-based interceptors (MGBI)—long-range strategic antiballistic missiles in Alaska and California designed against single or limited intercontinental ballistic missile (ICBM) attacks against the United States from Iran, North Korea, or other potential rogue states. The MGBI are supplemented by the theater deployments: in particular, by Standard Missile-3 (SM-3) Block-IA on ships in the Mediterranean Sea; by enhanced capability SM-3 Block-IB interceptors in Romania; and by a planned modernized version of the SM-3 Block-IIA interceptor and its ground-based equivalent in Poland and on ships in northern European seas. These will defend European allies against a limited strike with intermediate-range ballistic missiles.

17. "Meeting of the Valdai International Discussion Club," Official Internet Resources of the President of Russia, October 22, 2015, <http://en.kremlin.ru/events/president/news/50548>.

18. "Interv'yu s Yu. Solomonovym" [Interview with Yu. Solomonov], *Voenna-Kosmicheskaya Oborona* 63 (6) (2011): 85–86.

19. Sergey Rogov, Viktor Esin, Pavel Zolotarev, and Valentin Kuznetsov, "10 let bez Dogovora po PRO" [10 Years without the ABM Treaty], *Nezavisimaya Gazeta*, June 7, 2012, http://www.ng.ru/politics/2012-06-07/3_kartblansh.html.

leadership, and they dare not risk their careers by presenting dissenting views—in particular when those views would look similar to U.S. official positions.

Be that as it may, the problem is seriously complicated by the open-ended nature of the U.S. BMD program and the American rejection of any possible technical limitations on this program. It is likely such limits could be easily agreed upon, since the threat posed by the few missiles possessed by so-called rogue states requires a very different defense system from that directed against a Russian (or even Chinese) massive missile attack. Although most American experts deny any serious effect of the U.S. defense system on Russia's retaliatory capability, there are a few exceptions to this assessment.²⁰

The Russian response to what it sees as the primary challenge in the new nuclear era is multiple: new nuclear ballistic and cruise missiles are provided with advanced BMD penetration aids or are designed to directly attack missile defense sites. In particular, this mission is assigned to the new heavy ICBM type called "Sarmat," currently in the development and testing stage. Before or soon after 2020 Sarmat is supposed to replace the silo-based SS-18 heavy missiles and will be equipped with state-of-the-art penetration aids, possibly with gliding, hypersonic reentry vehicles. As an exotic option the missiles may be targeted around Antarctica to attack the United States from the southern azimuths, i.e., making them fractionally orbiting missiles.²¹ Other systems for this purpose are the newly deployed "Rubezh" ICBM with variable MIRV/single warhead payload (SS-27 Mod 3), which was tested at long and medium ranges, and "Iskander" shorter-range ballistic and cruise missiles, which allegedly will target U.S. Aegis Ashore Standard Missile-3 (SM-3) interceptor sites in Romania and Poland. The newly commissioned 955-class "Borei"-type submarines equipped with new "Bulava-30" SLBMs (SS-N-32) as the SS-27 Mod 2 "Yars" ICBMs can fly at a depressed trajectory to avoid space-based BMD elements. In June 2015, Putin declared, "During this year more than 40 new intercontinental ballistic missiles will be added to nuclear forces, which will be able to overcome even most technically sophisticated anti-ballistic missile systems."²²

In parallel to offensive systems, Russia is developing an anti-missile defense of its own. In 2011, Russia created the Air-Space Defense armed service and began building a multilayered defense system intended to integrate missile, air, and anti-satellite defenses "in the same bundle," to use Putin's descrip-

20. Dean Wilkening, "Strategic Stability Between the United States and Russia," in *Challenges in U.S. National Security Policy: A Festschrift Honoring Edward L. (Ted) Warner*, ed. David Ochmanek and Michael Sulmeyer (Washington, D.C.: RAND Corporation, 2014), 123–140, http://www.rand.org/content/dam/rand/pubs/corporate_pubs/CP700/CP765/RAND_CP765.pdf.

21. "GRTs imeni Makeeva razrabatyvaet tyazheluyu MBR bez reutovskikh raketchnikov" [Makeev State Missile Center is Developing Heavy ICBM without Reutov Missile Men], *Voenna-Promyshlennyi Kur'er*, June 17–23, 2015, http://vpk-news.ru/sites/default/files/pdf/VPK_22_588.pdf.

22. "Speech at Ceremony Opening ARMY-2015 International Military-Technical Forum," Official Internet Resources of the President of Russia, June 16, 2015, <http://en.kremlin.ru/events/president/transcripts/49712>.

tion.²³ In 2015, it was integrated with the Air Force to form a new armed service—Air-Space Force. Apart from aircraft, its defensive leg consists of new missile early-warning radars and satellites, a command-and-control complex, and an A-135 BMD system around Moscow, modernized (and renamed A-235) for terminal nonnuclear intercept.²⁴ The Air-Space systems development and deployment is the largest single component of the 2020 state armament program, comprising 20 percent of the twenty-three trillion rubles (U.S. \$350 billion) allocated to it.²⁵

In contrast to the U.S./NATO system, Russian Air-Space Defense has never been officially designed against rogue states' ballistic missiles or against third-party nuclear states. Its declared purpose is to defend Russia against U.S. advanced "air-space attack systems." In June 2013, while visiting a surface-to-air missile (SAM) manufacturing plant, Putin said, "An efficient Air-Space Defense is a guarantee of survivability of our strategic deterrent force and of defense of the territory against air-space attack means."²⁶ Although the term "air-space attack means" remains unclear, it is obvious that no other power besides the United States may threaten the survivability of Russian strategic forces.

Whereas BMD systems in the past were the monopoly of only the United States and the USSR, the new development of the emerging nuclear age is the proliferation of these systems to other countries. Presently, besides the two leading powers, anti-missile systems or their elements are being developed and deployed individually or in cooperation by NATO states, Israel, Pakistan, India, China, Taiwan, South Korea, Japan, and Australia. This development may complicate regional military balances, and its future effect is uncertain. For Russia this trend has not been of particular concern, with the exception of sharp opposition to the cases of NATO, Japan, and South Korea deployments, which are considered U.S. forward-based systems aimed at intercepting Russian deterrence missile forces.

Whether objections to Western anti-missile programs are motivated by strategic or political considerations, this issue officially remains the principal stumbling block to the New START Follow-on, as it was once again reconfirmed in Moscow's negative response to Washington's proposals of early February

23. "Expanded Meeting of the Defence Ministry Board," Official Internet Resources of the President of Russia, December 19, 2014, <http://en.kremlin.ru/events/president/news/47257>.

24. "Sistema A-235 / RTTs-181M / OKR Samolet-M" [A-235 System / RTTs-181M / OKR Samolet-M], *Military Russia*, April 1, 2011, <http://militaryrussia.ru/blog/topic-354.html>.

25. Alexei Arbatov, "Smena prioritetov dlya vykhoda iz strategicheskogo tupika" [Changing of Priorities of the Sake of Coming out from the Strategic Dead End], *Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya* 6 (2014): 3–17, <http://elibrary.ru/download/20322701.pdf>.

26. "Meeting on Implementing the 2011–2020 State Arms Procurement Programme," Official Internet Resources of the President of Russia, June 19, 2013, <http://en.kremlin.ru/events/president/news/18368>.

2016 to reduce nuclear forces by about 30 percent (down to one thousand warheads).²⁷

After the BMD program, the second priority threat of the new nuclear age, as seen from Moscow, also emanates from the United States: namely, precision-guided long-range conventional strike systems, relying on advanced command-control-information systems, many of which are based in space. Presently such systems are predominantly conventional long-range subsonic missiles of air- and sea-basing modes. In the foreseeable future supersonic cruise missiles and hypersonic boost-glide weapons with homing conventional warheads may be developed.

In his 2014 speech to the Valdai Discussion Club, President Putin described the basis for Moscow's concern over new weapon systems:

Today, many types of high-precision weaponry are already close to mass-destruction weapons in terms of their capabilities, and in the event of full renunciation of nuclear weapons or a radical reduction in nuclear potential, nations that are leaders in creating and producing high-precision systems will have a clear military advantage. Strategic parity will be disrupted, and this is likely to bring destabilization. The use of a so-called first global disarming strike may become tempting. In short, the risks do not decrease, but intensify.²⁸

Vice Prime Minister Dmitry Rogozin—a supervisor and outspoken representative of the military-industrial complex—went as far as to declare (referring to an unknown Pentagon war game) that three to four thousand U.S. high-precision weapons could during six hours destroy 80 to 90 percent of Russian strategic forces “and deprive it of any resistance capability.”²⁹

Nonetheless, research by some independent Russian experts demonstrates that, for the foreseeable future, the threat posed by U.S. long-range high-precision weapon systems has been grossly exaggerated, especially in terms of their capability to implement a preemptive strike against Russian strategic forces.³⁰ Such a strike would involve lengthy preparations and a long campaign

27. “Rossiya isklyuchila dal'neishie peregovory s SShA o yadernom razorozhenii” [Russia Rejected Further Nuclear Disarmament Talks with the U.S.], *Rosbalt*, February 7, 2016, <http://www.rosbalt.ru/federal/2016/02/07/1487436.html>.

28. “Meeting of the Valdai International Discussion Club,” Official Internet Resources of the President of Russia, October 24, 2014.

29. “Dmitrii Rogozin: chtoby paralizovat' Rossiyu, dostatochno nanesti 4 tysyachi udarov vysokotochnym oruzhiem” [To Paralyze Russia it is Enough to Launch Four Thousand Strikes of Precision-Guided Weapons], *TASS*, June 28, 2013, <http://tass.ru/arhiv/626071>.

30. Dvorkin, “Prospects for Cooperation,” 204–225; Vladimir Pyriev and Vladimir Dvorkin, “The U.S./NATO Program and Strategic Stability,” in *Missile Defense: Confrontation and Cooperation*, ed. Alexei Arbatov and Vladimir Dvorkin, English version ed. Natalia Bubnova (Moscow: Carnegie Moscow Center, 2013), 183–203, http://carnegieendowment.org/files/Missile_Defense_book_eng_fin2013.pdf; Yevgeny Miasnikov, “Counterforce Potential of Precision-Guided Munitions,” in *Nuclear Proliferation: New Technologies, Weapons, Treaties*, ed. Alexei Arbatov and Vladimir Dvorkin (Moscow: Carnegie Moscow Center, 2009), 85–103, http://carnegieendowment.org/files/12574Blok_YadernoyeRaspr_Eng_fin1.pdf.

of repeated massive strikes, lasting days or even weeks.³¹ This would greatly increase the likelihood of a nuclear response.³²

As for the hypersonic boost-glide systems the United States may deploy in the future, their numbers would probably be insufficient for such a massive operation. Besides, Russian strategic nuclear forces may be protected by both passive and active defense systems, which is the purpose of the Russian Air-Space Defense.³³ Attacking Russian supreme command centers with these weapons would hardly be feasible, since they are hardened even against a nuclear blast.³⁴ However, as dubious as it is, Russian leaders may be seriously concerned about the possibility of a surprise, pinpoint decapitating strike when they are outside of a bunker. This would not entail collateral damage and hypothetically may not be followed by massive nuclear retaliation. This may explain the great emphasis put by the Kremlin on this kind of threat.

Nonetheless Moscow's anxiety about high-precision nonnuclear systems has relatively more merit than in the case of a BMD system. In particular, new conventional systems may damage strategic stability: their launch is detectable from satellites but cannot be tracked for most of their trajectory by ballistic missile early warning radars, until their very short terminal phase. Thus they may provoke a launch-on-warning by the opponent lacking radar confirmation of the attack, which would increase the threat of war from the satellites' false alarm. New conventional strategic arms will significantly complicate estimates of the strategic balance and calculations of the sufficiency of deterrent forces, since objectively (technically and operationally) the new systems are blurring the accepted delineation between nuclear and conventional, global and regional, and offensive and defensive weapon systems.³⁵ They will certainly create even greater problems for future arms control negotiations and could jeopardize the existing INF Treaty as well as the New START.³⁶ Presently reference to these U.S. systems is one of the official justifications for Moscow's refusal to proceed with the START Follow-on.³⁷

31. Arbatov, "Smena prioritetov dlya vykhoda iz strategicheskogo tupika," 3–17.

32. Dmitrii Akhmerov, Evgenii Akhmerov, and Marat Valeev, "Po-bystromu ne poluchitsya: mogushchestvo neyadernykh krylatykh raket illyuzorno" [Not Be Prompt: Nonnuclear Cruise Missile Power Is Illusive], *Voennno-Promyshlennyyi Kur'er*, October 21–27, 2015, http://vpk-news.ru/sites/default/files/pdf/VPK_40_606.pdf.

33. Akhmerov et al., "Po-bystromu ne poluchitsya."

34. Vladimir Dvorkin, "Giperzvukovye ugrozy: neobkhodimost' realisticheskoi otsenki" [Hypersonic Threats: Need for Realistic Assessments], *Moskovskii Tsentri Karnegi*, March 3, 2015, <http://carnegie.ru/2016/03/03/ru-62951/iusm>.

35. Some options for boost-glide systems include using "Standard-3" interceptor stages as boosters.

36. One of the tested boost-glide systems is the U.S. Advanced Hypersonic Weapon (AHW), which is a medium-range missile and may be ground-based, thus impacting the INF Treaty.

37. "Rossiya isklyuchila dal'neishie peregovory," *Rosbalt*, February 7, 2016.

Besides countering cruise missiles and boost-glide systems with Air-Space Defense, Moscow is determined to match the United States in these same technologies. The development of Russian hypersonic systems began in the late 1970s and rapidly accelerated in the mid-1980s in response to the U.S. Strategic Defense Initiative (SDI). The first project was called “Albatross” and was based on the SS-19 ICBM, which lifted the gliding vehicle to an altitude of eighty to ninety kilometers, then turned down and accelerated to M5 speed (above 1.6 km/s) toward the target at intercontinental range. Equipped with a nuclear warhead, it was designed to evade all SDI echelons.³⁸ The first flight tests of this system were conducted in 1991–1992 and repeated in 2001–2004 (when it was renamed Project 4202). Later there was a plan to put this glider on the SS-27 “Topol-M” ICBM, and according to recent information it may be installed as an optional upper stage on the new heavy “Sarmat” ICBM.³⁹ As with the BMD development, unlike that of the U.S. system, Russian boost-glide arms would be designed not against rogue states or terrorists but against the United States and its allies as an efficient BMD penetrator, and hence would probably carry a nuclear warhead.⁴⁰

Similar to BMD systems, long-range conventional counterforce systems are no longer a U.S. and Russian monopoly. They are being developed by China, India, Pakistan, and probably other states as well. While India and Pakistan are at the early stages of such projects, China is much more advanced, having successfully tested a boost-glide hypersonic WU-14 system in 2014–2015.⁴¹ China also emphasizes medium-range ballistic missiles with precision-guided conventional warheads targeted at U.S. Navy ships (in particular around Taiwan) and American bases on U.S. ally territory.⁴²

Russia up to now has not expressed concern over China’s and other states’ projects of this kind. However, the U.S. advanced strategic conventional systems are put forward as a major threat to national security and a barrier to further nuclear arms reductions.⁴³

Another challenge of the new age is proliferation of nuclear weapons and their delivery systems—foremost ballistic missiles. As was mentioned above,

38. Aleksandr Raigorodetskii, “Proekt MBR ‘Al’batros’ (SSSR)” [ICBM “Albatross” Project (USSR)], *Dogs of War*, August 15, 2011, <http://www.dogswar.ru/oryjeinaia-ekzotika/raketnoe-oryjie/4945-proekt-mbr-qalbatros.html>; Dmitrii Kornev and Aleksei Ramm, “‘Al’batros’ mirovoi revolyutsii—chast’ I” [“Albatross” of World Revolution—Part 1], *Voenna-Promyshlennyyi Kur’er*, September 23, 2015, <http://www.vpk-news.ru/articles/27160>; Dmitrii Kornev and Aleksei Ramm, “Gipersmert’ na podkhode: korrespondenty ‘VPK’ otsledili pusk sekretnogo oruzhiya” [Hyper-Death on the Way: “VPK” Correspondents Detected Secret Weapon Launches], *Voenna-Promyshlennyyi Kur’er*, March 25, 2015, <http://www.vpk-news.ru/articles/24407>.

39. Dvorkin, “Giperzvukovye ugrozy.”

40. Kornev and Ramm, “Gipersmert’ na podkhode.”

41. Vikas Shukla, “China Successfully Tests Hypersonic Nuclear Missile Wu-14,” *Value Walk*, June 15, 2015, <http://www.valuewalk.com/2015/06/china-tests-wu-14-amid-us-tensions/>.

42. The Chinese missiles are “Dong Feng-21D” (CSS-5) and “Dong Feng-25.”

43. “Rossiya iskluchila dal’neishie peregovory,” *Rosbalt*, February 7, 2016.

compared to the United States this threat is much lower on the Russian agenda, if only because the perceived dangers emanating from NATO are a higher priority. Nonetheless, this threat figures much more prominently in Moscow's attitude to the INF Treaty, now the subject of mutual U.S.-Russian accusations of noncompliance.⁴⁴ While denying American accusations, Russia is challenging the value of the treaty, which prohibits deployments of land-based ballistic and cruise missiles with longer than a five-hundred-kilometer range. Some claim medium-range missiles may be Russia's answer to the NATO European missile defense program because of their capability of hitting anti-missile defense sites.⁴⁵

Another argument focuses on the threat of third countries' intermediate-range missiles, weapons denied Russia and the United States by the INF Treaty. Putin made the point in his famous Munich speech of 2007 and so did the then-minister of defense, Sergei Ivanov, who again mentioned it in 2012 in his new position as the head of presidential administration.⁴⁶ In fact, opponents of the treaty argue Russia should follow the U.S. example in view of the missile threats of third states and withdraw from the INF Treaty, just like the United States did regarding the ABM Treaty in 2002.

Besides the perceived threat of third states' medium-range missiles, Russia in general is concerned about the other seven nuclear weapons countries.⁴⁷ This concern is reflected in the Russian attitude toward the New START Follow-on, and it has become an integral part of Russia's official foreign policy documents. In particular, this demand was repeated in Moscow's February 7, 2016, response to the U.S. proposal to resume talks on further nuclear arms reductions.⁴⁸

However, there has been no official Russian proposal on either the sequence of engaging third nuclear states in the process or on the conceptual basis for multilateral limitations on nuclear arms (parity, stability, proportionality, or quotas), their subject (classes and types of arms), or verification requirements and possibilities. In contrast to the United States, the Russian priority in capping third states' forces is not North Korea or China but Britain, France, and Pakistan—while its position is mute on India and Israel. It appears the demand

44. In particular, Washington accuses Moscow of testing the ground-based cruise missile on an "Iskander" launcher with a range of over five hundred kilometers, which is prohibited by the INF Treaty. Russia claims that the U.S. deployment of SM-3 BMD interceptors in Romania and Poland is a violation of the treaty. These weapons are presently deployed on U.S. surface ships in the universal Mark 41 tube-launchers that also house Tomahawk long-range SLCMs. The INF Treaty prohibits deployment of land-based cruise missile launchers.

45. Dmitrii Litovkin, "Adekvatnyi 'Iskander'" [Appropriate "Iskander"], *Izvestiya*, February 21, 2007, <http://izvestia.ru/news/321928>.

46. "Speech and the Following Discussion at the Munich Conference on Security Policy," Official Internet Resources of the President of Russia, February 10, 2007, <http://en.kremlin.ru/events/president/transcripts/24034>.

47. They are Britain, France, Israel, Pakistan, India, China, and North Korea.

48. "Rossiya iskluchila dal'neishie peregovory," *Rosbalt*, February 7, 2016.

for multilateral nuclear arms control, even if sincere, presently serves more as a pretext for keeping strategic talks with the United States frozen.

THE NUCLEAR DIMENSION OF THE UKRAINIAN CRISIS

Even before the Ukrainian crisis, Russia had elevated the role of nuclear weapons in preventing “a large-scale aggression.”⁴⁹ The Ukrainian drama has raised tensions to levels that seemed unthinkable only a short time ago. In August 2014, at the height of the Ukrainian crisis, the Russian president said in an interview: “Our partners, regardless of the situations in their countries or their foreign policies, should always keep in mind that Russia is not to be messed with. I want to remind you that Russia is one of the largest nuclear powers. This is reality, not just words; moreover, we are strengthening our nuclear deterrence forces.”⁵⁰

Many independent analysts expounded on this statement and proposed complementing the official Military Doctrine with ideas for “selective use” of nuclear weapons for “show of resolve” and the “de-escalation of conflict.”⁵¹ These views might be brushed aside as “armchair strategist” fantasies if they did not draw on past official documents that presented such options as part of actual operational planning.⁵² In 2003, they were largely ignored: a NATO-Russian war seemed unthinkable. But in 2014–2015 they were revived in Russia and abroad.

Such declarations predictably received a tough response from the West. U.S. Deputy Secretary of Defense Robert Work said in the House of Representatives in 2015 that Moscow’s effort to use its nuclear forces to intimidate its neighbors had failed, actually bringing NATO allies closer: “Anyone who thinks they can control escalation through the use of nuclear weapons is literally playing with fire. . . . Escalation is escalation, and nuclear use would be the ultimate escalation.”⁵³

It is noteworthy the 2014 version of the Russian Military Doctrine retained the restrained wording of the former doctrine: “The Russian Federation reserves the right to use nuclear weapons in response to the use of nuclear and other

49. Putin, “Byt’ sil’nymi.”

50. “Zarubezhnye SMI: Putin ugrozhaet Zapadu yadernym oruzhiem” [Foreign Mass Media: Putin Threatens the West with Nuclear Weapons], *Russian Times*, August 29, 2014, <http://therussiantimes.com/news/12416.html>.

51. Markell Boytsov, “Terminologiya v voennoi doctrine” [Terminology of the Military Doctrine], *Nezavisimoe Voennoe Obozrenie*, October 31, 2014, http://nvo.ng.ru/concepts/2014-10-31/10_doctrina.html; Konstantin Sivkov, “Pravo na udar” [Right to Strike], *Voenno-Promyshlennyi Kur’er*, March 5, 2014, <http://vpk-news.ru/articles/19370>.

52. *Aktual’nye zadachi razvitiya Vooruzhennykh Sil Rossiiskoi Federatsii* [Critical Tasks of the Development of the Armed Forces of the Russian Federation] (Moscow: Ministerstvo Oborony, 2003), 43.

53. David Alexander, “Russia ‘Playing with Fire’ with Nuclear Saber-Rattling: Pentagon,” *Reuters*, June 25, 2015, <http://www.reuters.com/article/us-usa-nuclear-arms-idUSKBN0P52FC20150625>.

types of weapons of mass destruction against it and (or) its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat.”⁵⁴

Incidentally the official Russian strategic concept has only two differences from the U.S. nuclear posture of 2010.⁵⁵ One is that America is apparently willing to defend its allies with the use of nuclear weapons if they are attacked by overwhelming conventional forces, whereas Russia does not provide such assurance. The other is Russia’s readiness to use nuclear arms if facing the prospect of defeat by large-scale conventional aggression, while the United States for obvious reasons does not envision such a contingency.

Nonetheless, Russian declarations have produced a shock. As early as 2013 President Barack Obama accused Putin of anti-American rhetoric that has played into “old stereotypes about the Cold War.”⁵⁶ Later U.S. Secretary of Defense Ashton Carter was much harsher in responding to the Kremlin’s declarations: “Nuclear weapons are not something that should be the subject of loose rhetoric.” Carter said there was “no need” for Putin to make that point, since Russia’s nuclear capabilities are long established.⁵⁷ NATO Secretary General Jens Stoltenberg echoed that concern: “Russia’s nuclear saber-rattling is unjustified, destabilizing and dangerous.”⁵⁸

It should be noted that as menacing as they looked, Russian statements from 2013–2015 have not transgressed the boundaries of “nuclear deterrence”: there were no direct threats of actually using nuclear weapons. This rhetoric was shocking to the West, because it erupted all of a sudden after a quarter century of an unprecedented relaxation of East-West political relations.

The real problem is not the U.S./NATO nuclear deterrence posture versus a Russian nuclear war–fighting stance. It is a much more complex issue related to Moscow’s specific way of dealing with nuclear deterrence, which stems from the Russian historic experience, political system, and decision-making mechanism, as well as geostrategic position and technological development.

54. “Voennaya doktrina Rossiiskoi Federatsii,” *Rossiiskaya Gazeta*, December 30, 2014.

55. United States Department of Defense, *Nuclear Posture Review Report*, April 2010, https://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf.

56. Carol J. Williams, “Obama Blames Putin ‘Cold War’ Rhetoric for Strained U.S.-Russia Ties,” *Los Angeles Times*, August 9, 2013, <http://articles.latimes.com/2013/aug/09/world/la-fg-wn-obama-russia-strains-20130809>.

57. Margaret Brennan, “Carter Laments Putin’s ‘Loose Rhetoric’ on Nukes,” CBS News, June 22, 2015, <http://www.cbsnews.com/news/ash-carter-russia-vladimir-putin-loose-rhetoric-nuclear-missiles-nato/>.

58. “Nato Chief Says Russian Nuclear Threats Are ‘Deeply Troubling and Dangerous,’” *Guardian*, May 27, 2015, <http://www.theguardian.com/world/2015/may/28/nato-chief-says-russian-nuclear-threats-are-deeply-troubling-and-dangerous>.

RUSSIAN NUCLEAR MENTALITY

According to the Russian Military Doctrine of 2014, the main task of the national strategic force is “strategic (nuclear and nonnuclear) deterrence and the prevention of military conflicts.” This may be achieved by “maintaining the composition, state of combat readiness and preparedness of strategic nuclear forces, and by forces and means supporting their functioning and employment, as well as by command systems at a level guaranteeing the infliction of unacceptable damage on an aggressor under any conditions of the situation.”⁵⁹

It should be acknowledged that the contemporary U.S. nuclear posture is not much more specific—in contrast to the Cold War years when American doctrines were presented in great detail and closely correlated with force levels and weapons programs. This is precisely the time from which the principal difference in Russian and American nuclear mentality stems.

Only by the end of the 1950s, following fifteen years of nuclear weapons stockpiling and strategic thinking, and as a result of the Soviet Union developing intercontinental nuclear weapons capable of reaching U.S. territory, did the concept of deterrence come to the foreground of American military strategy. The political leadership in the United States grudgingly recognized that nuclear weapons were too dangerous for actual military use.

The chief theoretician and practitioner of this strategy was Secretary of Defense Robert McNamara, appointed in 1961, and aided by his assistants, who were referred to as the “whiz kids”: Harold Brown, Alain Enthoven, Daniel Ellsberg, Glenn Kent, Paul Nitze, Henry Rowen, Herbert York, and others. During the 1960s, after exploring a series of concepts (“counterforce,” “damage limitation”), the U.S. nuclear strategy firmly settled on the concept of “assured destruction.”⁶⁰ It envisioned maintaining strategic forces capable of surviving an opponent’s nuclear strike in sufficient numbers to cause the enemy unacceptable damage in a retaliatory strike (which was set to be an immediate destruction of up to 70 percent of the adversary’s industrial potential and 25 percent of its population). This was an ultimate version of nuclear deterrence, although it coexisted with war planning that was not fully reflective of the official strategic doctrine (this issue is addressed in more detail below). Nonetheless, official doctrine reflected the basic ideas underpinning Washington’s new approach to strategic deterrence, the development of its forces, and the principles for their deployment and employment.

In his famous 1967 speech in San Francisco, McNamara stated that deterrence of a “deliberate nuclear attack” upon the United States or its allies is ensured by maintaining a highly reliable ability “to inflict an unacceptable degree of damage upon any single aggressor or combination of aggressors, at

59. “Voennaya doktrina Rossiiskoi Federatsii,” *Rossiiskaya Gazeta*, December 30, 2014.

60. Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), 279; United States Bureau of the Budget, *Fiscal Year 1968 Defense Budget* (Washington, D.C.: U.S. Government Printing Office, 1967), 38–39.

any time during the course of a strategic nuclear exchange, even after absorbing a surprise first strike.” At the same time McNamara acknowledged that “the blunt, inescapable fact remains that the Soviet Union could still—with its present forces—effectively destroy the United States, even after absorbing the full weight of an American first strike.”⁶¹

Such a statement was unthinkable on the part of any high Soviet official of that time—and actually remains unimaginable in today’s Russia, half a century later. At the same time, from 1968 to 2010 McNamara’s historically important assessment remained the foundation for the concepts of mutual deterrence, strategic stability, and arms control treaties.

The Soviet Union arrived at similar conclusions about nuclear war much later—even at the declaratory level, to say nothing of military planning or arms programs. Initially the fundamental assumption of Soviet grand military doctrine had been that if a global war was unleashed by the West, the Soviet Union would defeat the enemy and achieve victory, despite enormous ensuing damage. Only during the 1970s did the USSR start to change its official declaratory position on the subject and gradually accept the idea of the impossibility of victory in a nuclear war because of its unprecedented destructive consequences. The most important factor shaping this change was the start of strategic negotiations with the United States.

The first major difference thus in the nuclear mentality of Russia and the United States is the historical origins of that nuclear mentality. In America the new thinking on nuclear matters was the product of McNamara’s efforts at securing political control over nuclear strategy, arms, and war plans—once the U.S. homeland came under the threat of a catastrophic nuclear war. His innovations subsequently led to the concepts of mutual deterrence, sufficiency, and parity of forces as well as joint strategic arms limitation. It cannot be emphasized too much that in the Soviet Union the “new look” at nuclear war was foremost the product of arms control.

The strategic concepts of Moscow and Washington were fundamentally incompatible during the 1950s and most of the 1960s. During the 1970s they edged closer through a recognition of parity and the destabilizing effect of anti-missile defenses, reflected in the ABM Treaty, SALT I in 1972, and SALT II in 1979. Those treaties could not be justified without acknowledging the impossibility of victory in a global war, which implied a revolution in the Soviet declaratory military ideology (and thus met with tough resistance from the top brass in the Ministry of Defense).

In the first half of the 1980s the two states again drifted far apart in their nuclear outlook. Political tensions were related to the Soviet invasion of Afghanistan. The strategic context was determined by U.S. plans for SDI development and testing, the deployment of medium-range missiles in Europe, and a long impasse at arms limitation talks. But by the end of the decade strategic mentality

61. Robert S. McNamara, *The Essence of Security: Reflections in Office* (New York: Harper & Row, 1968), 51–67.

on both sides again drew closer due to Mikhail Gorbachev's "new thinking" and the conclusion of the INF Treaty and START I. During the 1990s the strategic concepts of the United States and Russia continued to converge and became quite compatible by 2010 as reflected in START II (1993), START III framework agreement (1997), Strategic Offensive Reductions Treaty (SORT, 2002), and the New START (2010). After that they again diverged, and presently, after a six-year hiatus, are as wide apart as in the early 1980s. Thus the correlation between arms control and the evolution of Soviet and Russian strategic thinking is unmistakable.

The second difference between the two countries is the widely accepted idea on the Russian side that deterrence works in peacetime, but if deterrence fails, the task of the armed forces is to implement assigned missions as massively and effectively as possible. A hint of this traditional way of thinking emerged from Putin's speech at the Valdai forum of 2015, when he said: "I learned one rule on the streets of Leningrad fifty years ago—if a fight is inevitable, strike first."⁶²

The fact that in a nuclear age force posture and military planning (basically preparation for prompt and massive first attacks) may make war more likely and lead to a failure of deterrence has never been accepted in Russia. The military has traditionally relied on the political leadership to decide on the initiation of war, while politicians have delegated to the military full authority in planning combat operations once a war starts.

In the United States since the late 1960s efforts have been made to design operational plans (whether they were realistic or not) to avoid attacking command-control bunkers and urban-industrial centers as long as possible, even after the beginning of nuclear war, in order to preserve a chance of averting total mutual destruction.⁶³ From the Russian perspective (at least as conceived until the early 2000s), once "the war starts" forces are to be employed massively against all available targets to inflict maximum damage on the enemy. Any argument about the catastrophic consequences from U.S. retaliation with surviving forces is denied by insisting that nuclear war is not a game played by rules and that the blame for the consequences would be on the other side. Russia's generic world war experience is that of the massive devastation of its territory, while the United States has been able to preserve its territory virtually intact.

Because its most traumatic memory is of the catastrophic German attack of June 1941, a commonly accepted notion in Moscow is that political intentions, not force posture, determine the probability and forms of war initiation. In the United States there is a common view that force deployments and operational planning affect the probability of war. This idea is based on the classic case of

62. "Meeting of the Valdai International Discussion Club," Official Internet Resources of the President of Russia, October 22, 2015.

63. This pattern was changed by Presidential Directive 59 (PD-59), signed by President James Carter in July 1980, which stipulated attacks against Soviet sites of state political and military leadership.

World War I, which was triggered by German railway schedules.⁶⁴ McNamara's notion of strategic stability, in similar fashion, grew out of his reflections on the Cuban Missile Crisis, which deeply affected his views of the danger of inadvertent nuclear war.

The third difference is that, despite signing the U.S.-Soviet declaration on strategic stability in 1990, the Russian understanding of stable nuclear deterrence does not necessarily fit under McNamara's model of stability on the basis of mutual assured second strike destruction (i.e., the infliction of unacceptable damage). In 1990, stability was defined as a strategic relationship that was to serve as a basis for agreements limiting the arms race by "removing incentives for a nuclear first strike." This was to be achieved through a mutually acceptable "relationship between strategic offensive and defensive arms," and by "reducing the concentration of warheads on strategic delivery vehicles, and giving priority to highly survivable systems." This concept later deeply affected the START I and START II provisions.

Nonetheless this logic was only superficially accepted at top Russian state and diplomatic levels, and was never consistently incorporated into military programs. Factoring in a weapon system's suitability for a first or second strike (i.e., survivability, flight time, hard-target-kill capability, etc.) has never been accepted in the Soviet strategy and most probably is not recognized today.

For the sake of objective analysis, it should be underlined that in contrast to McNamara's declaratory doctrine of "assured destruction" and the concept of strategic stability stemming from it, actual U.S. war plans emphasized attacking Soviet strategic forces and other military sites before hitting urban-industrial centers, which implied first rather than second strike. The strategic target list was expanded to six thousand sites. The Joint Chiefs of Staff approved the Single Integrated Operational Plan (SIOP)-63 in December 1961.⁶⁵ Despite the evolution of the strategic doctrine, the actual plans for using U.S. nuclear forces changed very little: a final McNamara SIOP, adopted in February 1967, included the same basic versions of nuclear attacks as SIOP-63. The target list was expanded to ten thousand sites, adding the newly constructed Soviet, Warsaw Pact, and most probably Chinese military and industrial sites.⁶⁶

During the 1970s and 1980s counterforce and hard-target-kill planning and technical capability was an important, even if variable, element of the U.S. nuclear posture. It was justified as a counter to the Soviet counterforce capability, instrument of damage limitation (if deterrence fails), arms control bargaining chip, and strategic assurance to NATO allies, which depended on U.S. security guarantees implying nuclear first-use options in Europe. Still, first

64. According to its General Staff plan, Germany had to attack France without delay, since its military transportation plans envisioned quick victory over France to permit timely troop redeployment against Russia, which took a longer time to mobilize for war.

65. Kaplan, *Wizards of Armageddon*, 279; Milton Leitenberg, "Presidential Directive 59," *Journal of Peace Research* 18 (4) (1981): 312; U.S. Bureau of the Budget, *Fiscal Year 1968 Defense Budget*, 38-39.

66. Leitenberg, "Presidential Directive 59," 314-315.

strike implications of counterforce strategy have been a touchy and confusing subject in the U.S. defense policy, which once again stirred heated debates in Congress and the strategic community and affected weapon programs decisions in the Department of Defense during the two decades after McNamara's "strategic reformation."

Nothing of the kind took place in the USSR or Russia. The benefit of attacking strategic forces of the opponent was never put in doubt and such capability was to be enhanced within the limits of technology and the budget. Counterforce weapon systems and their employment planning were not considered an indispensable attribute of a first-strike posture (at least from the Soviet/Russian side). Counterforce attacks were to be conducted in parallel to strikes against opponents' command-control sites and urban-industrial targets.

At the same time, when directed by politically motivated decisions of state authorities, the Russian military had to sacrifice counterforce capabilities for the sake of reaching arms control agreements. This was the case with START I's 50 percent reduction of heavy ICBMs and still more under START II, which provided for the elimination of all MIRVed land-based missiles and, after seven years of debates, was ratified by the State Duma in 2000 under the rule by newly elected President Putin. This is yet another example of the unique role of arms control for Moscow's strategic policy, which does not have historic analogies like the United States. It is also one of the reasons why arms control and past treaties are so unpopular in present-day Russia and commonly perceived as unilateral concessions designed to placate U.S. leaders since the time of Gorbachev.

The fourth difference between the two sides is that Russia rejects the likelihood that its nuclear forces and programs may be perceived as a threat by the other side, provoking an arms buildup in response. Secretary McNamara elaborated on this philosophy in 1967: "Whatever be their intentions, whatever be our intentions, actions—or even realistically possible actions—on either side relating to the buildup of nuclear forces, be they either offensive or defensive forces, necessarily trigger reactions on the other side. It is precisely this action-reaction phenomenon that fuels the arms race." To escape from this sinister closed circle, the secretary advanced the idea of negotiations between the great powers: "We do not want a nuclear arms race with the Soviet Union—primarily because the action-reaction phenomenon makes it foolish and futile. . . . Both of our nations would benefit from a properly safeguarded agreement: first to limit, and later to reduce, both our offensive and defensive strategic nuclear forces. . . . We believe such an agreement is fully feasible, since it is clearly in both our nations' interests."⁶⁷

In Moscow the argument that enlarging offensive potential could cast doubt upon "peaceful" Soviet (or Russian) policy and impel the other side to undertake countermeasures was and still would be considered a heresy. Until the late 1960s expressing such thoughts could cost individuals their freedom, and even through the early 1980s it could result in drastic career consequences.

67. McNamara, *The Essence of Security*, 51–67.

As for practical defense policy there were indeed some historic examples of deliberate U.S. self-constraint in order to avoid creating too high a threat to Soviet (Russian) strategic forces and provoking an excessive response in weapons deployment programs or employment strategy. In the mid-1970s a decision was made to equip 300 rather than all 550 “Minuteman III” ICBMs with the improved, counterforce high-yield accuracy W-78/Mk-12A warheads. Thus in 1980–1983 this prompt counterforce potential consisted of 900 rather than 1,650 warheads, and provided a smaller hard-target-kill capability against Soviet land-based missiles than otherwise could be the case.

There are no examples of comparable restraint in Soviet/Russian nuclear arms procurement and deployment decisions, except as part of arms control treaties.

A tangible shift in Russian strategic deployments and planning happened in the second half of the 1990s, driven in part by a severe shortage of funding as a result of the 1998 financial crisis. No less significant were the broad contacts between Russian and American militaries, including regular exchanges between the two strategic forces’ top commanders. Most importantly intensive arms control talks and agreements (START II and START III) served to make Moscow’s policy-making on weapon programs more rational.⁶⁸

The most vivid example was the work of the special commission of military and civilian experts on the planning of strategic forces in 1998 under the chairmanship of the vice president of the Russian Academy of Sciences, Nikolai Laverov. The commission recommended placing emphasis on ground-mobile SS-25 single-warhead missiles and their follow-on systems with a small number of light MIRV warheads (SS-27 of various mods), as well as on a new compact submarine type (955 “Borei”) with SS-N-32 “Bulava-30” SLBMs (designed as a largely common system with the SS-27 ICBM). Silo-based MIRVed ICBMs, including heavy missiles, were to be withdrawn from service in line with START II upon the end of their life cycle (for this reason it was agreed in 1997 that the term of the treaty would be extended by five years). In line with the above, force restructuring strategic planning allegedly emphasized the delayed second-strike capability and downgraded counterforce targeting.

Alas, this positive break with traditional policy was curtailed after 2000. With the transition from President Yeltsin to President Putin, the top level of the Ministry of Defense changed too, as well as the directorate of the 4th Institute. Since 2012 the Soviet legacy has been in many respects revived: inadequate public access to sensitive defense information, ostracism of dissenting analysts, and decisions on military matters taken completely behind closed doors and under the predominant influence of the defense bureaucracy and industrial lobbies.

68. Those agreements had a positive effect but were not ideal. START II set a too-high warheads ceiling (3,500), which was not compatible with the prohibition of MIRVed ICBMs, and it did not place any limitation on SLBM warheads. START III never moved beyond a framework agreement. Those deficiencies made the treaties difficult to defend in the Russian parliament, which for many years was the task of the author of this essay.

Russian nuclear forces modernization programs also recalled the Soviet tradition. There was again a multiplicity of weapon systems being developed and deployed in parallel.⁶⁹ It is noteworthy that while implementing the massive nuclear force modernization program of 2011–2020 and proudly stressing its technical and strategic advances, Russian political authorities and military command have never thought about the possible U.S. and NATO reaction. Nonetheless, the first news about the new cycle of the U.S. nuclear forces modernization program after 2020 have already triggered a Russian campaign focusing on an imminent “military threat” from abroad. In today’s Russia, arms control has become an extremely unpopular topic, and past agreements often have been referred to as virtually treasonous (openly in the conservative mass media and often only a little less so at the official level).

NUCLEAR WEAPONS AS A “SACRED COW”

The above considerations should not be interpreted as idealizing the American model. It was the United States that first tested and used nuclear weapons in war. Before the 1990s the United States started four consecutive massive cycles of the nuclear arms race, obliging the USSR to catch up. Since the early 1960s the U.S. strategy envisioned, with varying levels of prominence, counterforce targeting and hard-target-kill capabilities against Soviet nuclear forces, challenging Moscow to respond in kind and at the same time implement expensive programs to enhance force survivability. With few exceptions, the United States initiated the development and deployment of all new types of strategic arms, including the recent conventional BMD and prompt global strike systems. While presently both nations are accusing each other of being in violation of the INF Treaty, the United States is the only nation that has openly undercut nuclear arms control by failing to ratify SALT II and the CTBT, and by abrogating the ABM Treaty.⁷⁰ Washington’s nuclear posture long envisaged the first use of nuclear weapons and retained this concept even after the end of the Cold War, when NATO acquired conventional superiority over Russia and relations with Moscow were highly cooperative.

Nevertheless, as was discussed above, the growing gap in U.S. and Russian thinking, talking, and acting on nuclear arms presents a critically important and dangerous problem, in particular at the present time of high political tensions. Following the post-2011 deterioration of U.S.-Russian relations and their return to a “hybrid” Cold War model, nuclear weapons have moved back to the

69. These were ground-mobile and silo-based “Yars” SS-27 Mod 2 MIRVed ICBMs and SS-27 Mod 3 “Rubezh” missiles deployment, a new silo-based MIRVed “Sarmat” heavy missile development, a new railway-based “Barguzin” ICBM development, and deployment of a modified SS-N-23 M1 SLBM system on Delta-IV submarines in parallel to SS-N-32 “Bulava-30” missiles on the new “Borei” nuclear-powered ballistic missile submarines (SSBNs).

70. Russia, for its part, abrogated the Conventional Armed Forces in Europe (CFE) Treaty beginning in 2007, which was finalized in 2015.

highest place in Russian foreign and defense priorities. In contrast to the USSR, Russia's nuclear arsenal is the country's only element of status as a great power and heir of Soviet superpower standing. Nuclear forces are the area in which Russia is equal and in some categories superior to the United States, as well as to the aggregate capability of all other seven nuclear arms states.

Unlike the Soviet leadership, the Russian political elite does not consider nuclear arms control to be a tool for enhancing security and believes most past treaties on offensive nuclear arms are unilateral concessions to the West. After the New START further nuclear arms reduction is commonly perceived as a risk, since it would diminish the only Russian asset of security and world status. Hence the political role of the nuclear arsenal in Moscow's view is greater than it had been for the USSR once parity was achieved by the early 1970s.

The nuclear rhetoric and armed forces activities of Russia and NATO in 2013–2016 have revived the danger of a nuclear war that looked totally unthinkable only five years ago. The lack of experience of Russian and U.S. political leaders in real crisis management (which their predecessors acquired in the painful learning process of the Cold War) and the illusions they may have over their ability to conduct policy on the brink of armed conflict may suck them into a vortex of inadvertent escalation in a crisis adjacent or close to Russian territory. Six years of stalemate in arms control talks have removed an important channel of strategic communication between Russian and American national command authorities. Presently any common understanding of the rules of mutual nuclear deterrence, the limited utility of nuclear weapons, and strategic stability has evaporated. A prolonged breakdown of regular military-to-military contacts and the arrival of a new generation of commanders (who are more disrespectful and combative toward each other than their predecessors) may result in dangerous collisions when armed forces maneuver in close proximity.

No one explained the danger of this widening gap better than William Perry, a distinguished American statesman and public authority. Referring to past arms control agreements, he made an observation quite relevant to the present situation. In his recent book, *My Journey at the Nuclear Brink*, he notes a successful arms control agreement could have put a brake on the arms race, “but even more important, it would have engaged us in a dialogue with our deadly foe, given both sides a degree of transparency, and, most critically, given us context—a better understanding of our opponent—to inform the awesome decisions we were expected to make in a heartbeat.”⁷¹

Understanding the essence and historic roots of the differences of the U.S. and Russian nuclear mentality might facilitate an effort by both powers to forge a common, up-to-date understanding of the principles of strategic stability and enhance them by arms control provisions and through regular military and civilian contacts on strategic matters.

71. William J. Perry, *My Journey at the Nuclear Brink* (Stanford, Calif.: Stanford University Press, 2015), 53.

CONCLUSION

The challenges of the new nuclear age look quite different from Washington and other Western capitals than from Moscow. In the Cold War, security perceptions were opposite, but symmetric and similar in their order of priorities. This divergence began near the end of the 1990s and turned into a broad schism during the Ukrainian crisis of 2014–2015.

No doubt the above mismatched threat perceptions by the great powers (including China, which requires a special study) are detrimental to international security in the new nuclear age. In my view, however, in contrast to the outlook of both sides, the greatest common challenge for the foreseeable future is a comprehensive crisis of the system of nuclear arms control treaties and negotiations, which may lead to a resumed arms race, the disintegration of the nuclear nonproliferation regime, and the degradation of safety standards for handling nuclear materials.⁷²

This crisis of arms control, in the context of the new confrontation between Russia and the West and proliferating arms races in nuclear and conventional long-range systems, may make the actual use of nuclear weapons in a combat operation by accident or by terrorist act entirely possible in the nearest future. As was pointed out in a book coauthored by Gareth Evans, former Australian foreign minister and a prominent arms control proponent: “Any use of nuclear weapons, the most indiscriminately inhumane ever devised, would have a catastrophic human and environmental impact, beyond the capacity of any state’s emergency systems to address.”⁷³

Preventing this dreadful prospect should be the top priority of Russia and the United States, regardless of the political issues that divide them. An important bonus of strategic talks would be the resumption of regular contacts between state officials and multi-layered military interactions to restore a common understanding of the rules of nuclear deterrence, the essence of strategic stability, and measures for avoiding risks of accidents and inadvertent escalation. The NATO-Russian military buildup and intensive exercises in Europe and the Arctic should be curtailed on a mutual basis, as well as drills and redeployments of nuclear forces.

Of course a key question is whether the current Russian political system, because it relies on anti-American ideology, can afford a new détente and arms control breakthroughs with the West. The answer to this question is unknown until a real effort is made. This is a task primarily for the United States as the most powerful nation in the world. Its position affords it the opportunity to conduct a realistic and long-sighted review of foreign policy. Moreover,

72. Alexei Arbatov, “An Unnoticed Crisis: The End of History for Nuclear Arms Control?” Carnegie Moscow Center, June 16, 2015, <http://carnegie.ru/2015/06/16/unnoticed-crisis-end-of-history-for-nuclear-arms-control/ians>.

73. Gareth Evans, Tanya Ogilvie-White, and Ramesh Thakur, *Nuclear Weapons: The States of Play 2015* (Canberra, Australia: Centre for Nuclear Non-Proliferation and Disarmament, 2015), x.

the historical record provides encouraging examples of Moscow's readiness to follow a cooperative course: Brezhnev's policy of détente, Gorbachev's "new political thinking," and Putin's advances to the West in 2000–2007.⁷⁴ Besides, as historical experience shows, depending on the international context, the Russian domestic political system may tangibly change for the better as well as for the worse.

Another key question is whether President Donald Trump's administration will develop an interest in furthering arms control against the background of its planned nuclear forces modernization and BMD expansion. Besides an uncertain evolution of the executive branch's position on the subject, a serious impediment may come from an unprecedented political campaign against Putin's Russia in Congress and mass media, which also is serving as a tool of the opposition's battle against a new president.

Nonetheless, saving the arms control system and preventing or at least limiting the forthcoming cycle of the arms race is so essential to the national interests of the two powers, and to international security at large, that no effort should be spared to impress this understanding on the leaders of both states in their search for possible grounds for cooperation.

A new U.S.-Russian strategic agreement might encourage progress in other areas of arms control, such as substrategic nuclear arms, and draw third states into the process. It could facilitate efforts to limit the proliferation of nuclear arms, as well as ballistic, cruise, and hypersonic missiles, and increase the safety of nuclear sites and materials. These steps would require participation of other nuclear powers and emerging regional leaders. However, this will not be possible without U.S. and Russian leadership starting the process. As Legvold noted: "Neither the United States nor Russia can alone or together fully restore this complex set of arrangements. But only if they re-engage can key elements in this architecture be saved, and that will not happen as long as the current stand-off continues. . . . There is no path forward unless the two countries travel it together. They arrived here together and only together can they alter the relationship's currently unhappy trajectory."⁷⁵

No doubt many in the West would object to this proposal, claiming it would reward Russian leadership for its actions in Ukraine and Syria, as well as for its nuclear bravado, massive arms buildup, and show of force. To this objection, former Senator Sam Nunn, a leading American public figure and authority on international security, responded: "We can no longer afford to treat dialogue as a bargaining chip. 'You upset us and we will punish you by not talking' is not a sound strategy for two countries that control 90 percent of the world's nuclear weapons and materials. . . . When the United States and Russia do manage to

74. It is now largely forgotten that upon coming to power in 2000 Putin achieved ratification by the Russian parliament of START II, CTBT, and the Adapted CFE Treaty (2004), signed and ensured ratification of SORT, and promoted talks with the United States on joint BMD system development, despite the U.S. withdrawal from the ABM Treaty in 2002.

75. Legvold, *Return to Cold War*, 132.

cooperate on regional or global issues, great things can happen for the mutual benefit of both our countries and, indeed, the world.”⁷⁶

This mutual benefit comes more than anything from forging bilateral and multilateral fronts in dealing with the challenges of the emerging twenty-first-century nuclear era.

76. Sam Nunn, “Remarks at Carnegie Moscow Center,” Carnegie Moscow Center, February 24, 2016, <http://carnegie.ru/2016/02/24/remarks-at-carnegie-moscow-center/iv2s>.

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Linton Brooks served from July 2002 to January 2007 as Administrator of the U.S. Department of Energy's National Nuclear Security Administration, responsible for the U.S. nuclear weapons program and for the Department of Energy's international nuclear nonproliferation programs. In the early 1990s, he served as Chief U.S. Negotiator for the first Strategic Arms Reduction Treaty. Ambassador Brooks has over five decades of experience in national security, much of it associated with nuclear weapons, including service as Assistant Director of the Arms Control and Disarmament Agency, Director of Defense Programs and Arms Control on the National Security Council staff, and a number of Navy and Defense Department assignments. As a Navy submarine officer, he served on four nuclear-weapons capable ships. Ambassador Brooks is now an independent consultant on national security, a Senior Advisor at the Center for Strategic and International Studies, a Distinguished Research Fellow at the National Defense University, a member of the National Academy of Sciences' Committee on International Security and Arms Control, a member of the Board of Managers that oversees the operations of the Sandia National Laboratories, and an advisor to five other Department of Energy national laboratories.

Francis J. Gavin is the Giovanni Agnelli Distinguished Professor and the inaugural Director of the Henry A. Kissinger Center for Global Affairs at Johns Hopkins School of Advanced and International Studies (SAIS). In 2013, he was appointed the first Frank Stanton Chair in Nuclear Security Policy Studies and Professor of Political Science at MIT. Before joining MIT, he was the Tom Slick Professor of International Affairs and the Director of the Robert S. Strauss Center for International Security and Law at the University of Texas. From 2005 until 2010, he directed The American Assembly's multiyear, national initiative, The Next Generation Project: U.S. Global Policy and the Future of International Institutions. He is the author of *Gold, Dollars, and Power: The Politics of International Monetary Relations, 1958–1971* (University of North Carolina Press, 2004) and *Nuclear Statecraft: History and Strategy in America's Atomic Age* (Cornell University Press, 2012). Gavin received a Ph.D. and M.A. in Diplomatic History from the University of Pennsylvania, a Master of Studies in Modern European History from Oxford University, and a B.A. in Political Science from the University of Chicago. Gavin is a Senior Fellow of the Clements Program in History, Strategy, and Statecraft, a Distinguished Scholar at the Robert S. Strauss Center, a Senior Advisor to the Nuclear Proliferation International History Project at the Woodrow Wilson Center, and a life member of the Council on Foreign Relations.

Meeting the Challenges of the New Nuclear Age

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