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**Francis J. Gavin.** *Nuclear Weapons and American Grand Strategy.* Washington, D.C.: Brookings Institution Press, 2020. ISBN: 9780815737919 (paperback, \$31.99).

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# INTRODUCTION BY JOSHUA ROVNER, AMERICAN UNIVERSITY

Note that the effects of a hypothetical nuclear war hard to comprehend. In a clash between nucleararmed states, the devastation might overwhelm the value of any imaginable political goals. Such a conflict may not be unthinkable, but it is hard to think about.

During the Cold War, the characteristics of nuclear weapons—their fascinating physics and grotesque effects—sometimes led to a kind intellectual splintering. Scientists and engineers obsessed over the minutiae of warheads and delivery vehicles in order to maximize the performance of weapons that they would never use. Strategists, meanwhile, puzzled over highly abstract models pitting nameless states in stylized crises. At the height of the Cold War, they developed increasingly sophisticated models to imagine the dynamics of deterrence, escalation, and war. The efforts of this "nuclear priesthood" were hard to comprehend for anyone without a background in economics and formal logic, including traditional strategists steeped in military history and the writing of Carl von Clausewitz.<sup>1</sup>

Francis J. Gavin's most recent book pushes in the other direction. Rather than treating nuclear weapons as removed from politics, his collection of essays stresses their connection. Statesmen during and after the Cold War did not treat the nuclear balance as a math problem they could leave to the mathematicians. Instead, political goals animated their views on everything from crisis bargaining and arms racing to detente and arms control. Technology mattered, but the underlying politics mattered more. As a result, we cannot understand the relationship between nuclear weapons and grand strategy unless we view the problem through the eyes of policymakers with competing interests and values.

*Nuclear Weapons and American Grand Strategy* is an eclectic mix of essays on theory, history, and scholarship. The reviewers in this forum share a diverse set of professional backgrounds in the policy world and academia. James N. Miller, currently a fellow at the Johns Hopkins University Applied Physical Laboratory, served as Under Secretary of Defense for Policy in the Obama Administration. Heather Williams, a lecturer at Kings College London, previously occupied advisory roles for the U.S. Department of Defense and the British House of Lords. Despite the variety of essays in Gavin's book, and the diversity of their own experiences, the reviewers call attention to a set of overarching themes.

Miller and Williams both note that Gavin asks more questions than he answers. This is not accidental. Grand strategy is inexorably tied to the messy business of diplomacy and international politics, even where nuclear weapons are concerned. No school solutions exist for nuclear dilemmas, because the diplomatic context is always changing and contingency looms large. Making matters worse is the difficulty in measuring success and failure. The value trade-offs that inhere in international diplomacy are subjective and hard to quantify, despite the best efforts of quantitatively minded political scientists. Readers may be frustrated by a litany of questions with few answers, but Gavin insists that policymakers and scholars confront them. If nothing else, the process will make them less vulnerable to hubris.

Gavin believes that the academy has largely failed in this regard. Professional incentives in higher education lead younger scholars toward quantitative work, and discourage them from asking foundational questions about history, politics, and strategy. For Gavin, research on nuclear weapons and grand strategy in an intellectual agility test, requiring the ability to see the problem from multiple directions and levels of analysis. It also demands a historical deep dive - an unappealing prospect for junior scholars staring at the tenure clock. Both reviewers agree with this critique, though Williams suggests that the situation is somewhat different outside the United States.

<sup>&</sup>lt;sup>1</sup> Marc Trachtenberg, *History & Strategy* (Princeton: Princeton University Press, 1991), 3-46.

Finally, the reviewers point to the difficulty of translating scholarship for policymakers. Williams applauds Gavin's call to remove jargon wherever possible, and to write in ways that are easy to digest without resorting to misleading simplifications. Miller similarly notes that that the theoretical issues stirring academic debates may seem meaningless to policymakers. There is some tension lying just under the surface of this issue, however. Policymakers might have the intuitive sense of contingency and context that Gavin appreciates; yet they do not always have the luxury of patience and indecision. They just need the best possible answers to hard questions. It is not enough for practitioners to acknowledge uncertainty. At some point they need to decide that some answers are better than others, even if none of them are perfect. History may be an anecdote for overconfidence, but it should not lead to policy sclerosis. In an important sense, the tension built into the scholar-policy relationship reflects the difficulty of striking this balance.

#### Participants:

**Francis J. Gavin** is the Giovanni Agnelli Distinguished Professor and the inaugural director of the Henry A. Kissinger Center for Global Affairs at SAIS-Johns Hopkins University. He is also the chair of the editorial board of the *Texas National Security Review*. His writings include *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). His latest book is *Nuclear Weapons and American Grand Strategy*.

Joshua Rovner is Associate Professor at the School of International Service at American University and Managing Editor of ISSF.

James N. Miller is President of Adaptive Strategies LLC, which consults to private and non-profit sector clients on technology and strategy. He is a senior fellow at Johns Hopkins University's Applied Physics Laboratory and serves on the Defense Science Board, as well as on the Board of Advisors for the Center for a New American Security. He is a member of the Council on Foreign Relations, and the International Institute for Strategic Studies. He served as Under Secretary of Defense for Policy from 2012 to 2014, and as Principal Deputy Under Secretary of Defense for Policy from 2009 to 2011. Dr. Miller received a B.A. degree with honors in economics from Stanford University, and Master's and Ph.D. degrees in public policy from the John F. Kennedy School of Government at Harvard University. The views expressed in this review are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. government.

**Heather Williams** is a Lecturer in the Centre for Science and Security Studies (CSSS) at King's College London where she teaches on arms control and deterrence. She is also an Associate Fellow at the Royal United Services Institute (RUSI) and a Senior Associate Fellow with the European Leadership Network. From 2018 to 2019 Dr. Williams served as a Specialist Advisor to the House of Lords International Relations Committee inquiry into the Nuclear Non-Proliferation Treaty and Disarmament. She is also an adjunct Research Staff Member in the Strategy, Forces, and Resources Division of the Institute for Defense Analyses in Alexandria, Virginia, where she has worked since 2008 on U.S. nuclear policy for the U.S. Department of Defense. She currently leads projects on emerging technology and the future of arms control, risks of social media to conflict escalation, and the Nuclear Non-Proliferation Treaty. Her research is supported by the MacArthur Foundation, Carnegie Corporation of New York, U.S. Department of Defense, and U.S. Department of Energy. Until January 2015, Heather was a Research Fellow on Nuclear Weapons Policy at Chatham House and led research on the Nuclear Non-Proliferation Treaty and the Humanitarian Impacts of Nuclear Weapons Initiative. Dr. Williams completed her PhD, "Negotiated Trust: U.S.-Russia Strategic Arms Control, 1968-2010", in the Department of War Studies at King's College London in December 2014. She has a BA in International Relations and Russian Studies from Boston University, and an MA in Security Policy Studies from The George Washington University. Her most recent publication is, "Asymmetric Arms Control: Scenarios for Hypersonic Glide Vehicles" in *Journal of Strategic Studies* (Autumn 2019).

### Review by James N. Miller, Senior Fellow at Johns Hopkins University Applied Physics Laboratory, and former Under Secretary of Defense for Policy

rank Gavin's *Nuclear Weapons and American Grand Strategy* provides a diverse and insightful collection of nine essays. Nearly all of the essays are revised versions of previously published work, which Gavin acknowledges up-front. All are well-written and (as testified by 66 pages of endnotes) well-researched. They address issues of great and longstanding importance to the United States, and indeed to the world, ranging from non-proliferation, to arms control, nuclear deterrence, and nuclear modernization. And as the title implies, these essays – particularly the first and last – address the intersection between these weighty topics and American grand strategy.

As Gavin notes in the preface, the essays raise more questions than they answer. As if to drive home the point, the final essay of the book ends with an unanswered question, one of a couple dozen in that chapter alone. This relentless questioning has the effect of highlighting moments in the book where Gavin provides answers. Indeed, some of the most compelling parts of the book occur when Gavin offers his perspective clearly. Consider his unsparing conclusion about Kenneth Waltz's famous argument that nuclear proliferation may lead to peace by encouraging caution among states. For Gavin, this argument is "is deeply problematic and contradictory, and it is not taken seriously by people who matter" (27).

Gavin is trained as both a political scientist and a historian, and his skills in both disciplines shine through in the book. Gavin is realistic about the limitations of political science and brings a historical perspective to the limitations of historical analysis, without drowning the reader in epistemological quandaries. The chapter on "NATO's Radical Response to the Nuclear Revolution" is particularly interesting, not just because of the history of the case, but because of Gavin's evident discomfort in rendering an unbiased judgment. His conclusion says it all: "NATO's strategy was expensive, both economically and politically, and risky," but "the strategy appeared to work" (126).

While understanding that an archival historian such as Gavin tends to focus on past cases, where declassified records provide fuller accounts of key decisions, this reader would have enjoyed seeing more analysis of recent history. The book touches only lightly on the last three decades: the policies of Presidents Dwight Eisenhower and John F. Kennedy each receive more coverage than the policies of Presidents Bill Clinton, George W. Bush, Barack Obama, and Donald Trump combined. Given the current attention to great power competition and the implications for nuclear weapons and grand strategy, more analysis of the post-Cold War world is especially important today.

For example, readers would benefit from a discussion of President Trump's 'sole authority' to direct the employment of nuclear weapons, which was debated in a remarkable Senate Foreign Relations Committee hearing in November 2017. Although this particular essay was not included in this volume, Gavin wrote about this topic in 2018, giving readers another glimpse of his strong views: "Literally nothing matters more than how a president thinks about and acts on this sacred responsibility, and literally nothing should worry us more in our current circumstances."

In a fascinating chapter, on "The History of What Did Not Happen," Gavin wrestles with the question of what contributions a historian can make. His conclusion appears well-reasoned, though it is more than a bit unsettling. An understanding of "deeper history is as likely to cloud as to sharpen our views," he writes, but at least historians "can provide needed skepticism and humility about broader claims" made by political scientists, policy analysts, and political leaders (167).

As if to see if the reader is attentive, Gavin himself then immediately offers a broad claim, while acknowledging that it is his just "best guess" after sifting through the historical record: "Fewer nuclear weapons in the world is probably a good thing, but using force or coercion to achieve that goal is probably not" (168). To give an obvious counter-example, if the United

<sup>&</sup>lt;sup>1</sup> Francis J. Gavin, "Must We Mean What We Say? Making Sense of the Nuclear Posture Review," *War on the Rocks*, 15 February 2018; <u>https://warontherocks.com/2018/02/must-mean-say-making-sense-nuclear-posture-review/</u>.

States reduced its nuclear arsenal from several thousand weapons to ten vulnerable silo-based missiles, each with 10 warheads, few would see this as a "good thing." And few would see the failure of a future U.S. President to use force to stop a terrorist with a nuclear weapon headed for New York City as a "good thing." This reader actually wonders whether in making such a broad claim, Gavin was cleverly trying to induce the reader to accept a view apparent in most of his writing: context matters, and details matter. And, one might add, broad generalizations about nuclear policy are not helpful.

In the same chapter, Gavin argues convincingly that the rational choice model of deterrence and coercion famously articulated by Thomas Schelling in the 1960s is inadequate and indeed misses the mark in explaining a succession of U.S.-Soviet crises over Berlin starting in 1948. To some political scientists, this is an audacious claim. To practitioners, it is mundane. Although rational choice theory remains popular in political science and economics, it has been recognized as insufficient among most practitioners and policy analysts for fifty years. Indeed, Schelling's long-time Kennedy School colleague Graham Allison showed convincingly in his 1971 book *The Essence of Decision* that while rational choice theory ("Model I") can have analytical value, it leaves out potentially decisive dynamics of bureaucratic processes ("Model III"), and of political bargaining ("Model III").<sup>2</sup> Around the same time as Allison's book appeared, in 1974, Amos Tversky and Daniel Kahneman published their seminal work on the systematic biases inherent in human judgment under uncertainty, undermining "rational choice" theory from a different angle, and spawning extensive and useful work in national security, including prospect theory.<sup>3</sup>

For the interested reader, it is worth noting that Gavin has given serious thought to this problem of methodology. In a 2015 essay, after characteristically asking a multitude of thoughtful questions, he invites others to join in a reconsideration of the analytical frameworks used in the field of international relations:

As scholars and practitioners who spend our lives rigorously assessing and challenging the assumptions about the world we live in, however, we should not be afraid to turn the lens in on ourselves. As teachers, mentors, and citizens, we owe it to our students to ask the same kinds of difficult questions we are training them to ask and answer.<sup>4</sup>

Despite tilting toward the more theoretical side of Gavin's work, this volume provides an enjoyable and meaty read for political scientists and policy wonks alike. For political scientists working on international security, it is a must-read. For those in the policy community, it is a good read, and well worth the time. But as with all writings in this complex and diverse field (including this essay!), it must be viewed with a critical eye.

<sup>&</sup>lt;sup>2</sup> Graham Allison, Essence of Decision: Explaining the Cuban Missile Crisis (Boston: Little Brown, 1971)

<sup>&</sup>lt;sup>3</sup> Amos Tversky and Daniel Kahneman, "Judgment under Uncertainty: Heuristics and Biases," *Science* 185:4157 (September 1974), 1124-1131.

<sup>&</sup>lt;sup>4</sup> Francis J. Gavin, "Breaking Discipline and Closing Gaps? The State of International Relations Education," *War on the Rocks*, 5 February 2015; <u>https://warontherocks.com/2015/02/breaking-discipline-and-closing-gaps-the-state-of-international-relations-education/</u>.

## Review by Heather Williams, King's College London

o misquote Margaret Atwood, "No one hates experts more than experts."<sup>1</sup> Francis Gavin's book, *Nuclear Weapons* and American Grand Strategy, is hardly so harsh as that, but it does turn a heavily critical eye to the state of nuclear scholarship. The book is refreshingly full of more questions than answers, something Gavin acknowledges might be "frustrating" to readers (4). Indeed, from the opening, it is an invitation to scholars and students to engage with "unanswered questions of the nuclear age," such as the enduring debate over whether "more may be better" (1-22). But it is also an invitation to engage with existential questions for nuclear scholars: what has been the intellectual contribution of the nuclear studies community? And how do we 'talk' about nuclear weapons?

A collection of essays and some previously published works, *Nuclear Weapons and American Grand Strategy* ultimately makes two key arguments. First, America has consistently pursued strategies of inhibition, including missile defense and various coercive measures to prevent nuclear proliferation. These strategies of inhibition created tension between the goals of disarmament and deterrence, especially because U.S. nuclear forces are not solely for the defense of the American homeland. Rather, the United States is also responsible for extending deterrence to its allies in Europe and Asia with the primary goal of preventing the further spread of nuclear weapons. Disarmament would, somewhat paradoxically, make this more challenging.

Some states believe nuclear weapons play a fundamental role in shaping international politics, and those in possession of them are reluctant about disarmament. The real value of their arsenals, however, is not always clear. Nick Ritchie, for example, argues that the value of nuclear weapons is "conferred upon them within a particular socio-historical context," and the pathway to disarmament entails stripping nuclear weapons of their *perceived* deterrent value.<sup>2</sup> So when and how will nuclear disarmament happen? Gavin's prediction is that this will occur when "a combination of shifting norms, empowered international institutions, the resolution of underlying geopolitical conflicts, and new technologies, along with the growing reawakening of awareness of the dangers of nuclear weapons, may create the circumstances to move toward some of the goals of disarmament without undermining the benefits of deterrence" (187). Such an answer is typical of *Nuclear Weapons and American Grand Strategy* and might frustrate those in favor of parsimony, but probably best captures the complexity of nuclear politics both historically and in the present day.

Strategies of inhibition can also inform contemporary questions about the future of arms control. Drawing on the historical example of the Strategic Arms Limitation Talks (SALT) Agreement, Gavin challenges the conventional wisdom that the agreement strengthened strategic stability. Rather, SALT prompted mistrust among allies and competition among adversaries, and may have prompted the controversial Soviet decision to deploy SS-20 intermediate range missiles in 1979. The balance of disarmament and deterrence, allies and adversaries, is pervasive in nuclear policy and is more complex than single methodological approaches can capture.

In the most recent issue of *Daedalus*, James Cameron similarly demonstrates that lenses such as "strategic stability" are insufficient in explaining the complexity of drivers behind arms control agreements.<sup>3</sup> The lessons for the future of arms control, therefore, are that agreements must be perceived as fair and equal by both sides, including by domestic stakeholders such as the military; that cooperation with adversaries should not come at the cost of trust with allies; and that rhetoric

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<sup>&</sup>lt;sup>1</sup> The original quotation reads: "No one hates writers more than writers." Margaret Atwood, *On Writers and Writing* (London: Virago Press, 2003), 87.

<sup>&</sup>lt;sup>2</sup> Nick Ritchie, "Waiting for Kant: Devaluing and Delegitimizing Nuclear Weapons," *International Affairs* 90:3 (2014): 601-

<sup>&</sup>lt;sup>3</sup> James Cameron, "What History Can Teach," *Daedalus* 149:2 (2020):116-132.

about "parity" and "stability" cannot belie the fact that countries will continue to compete and seek superiority. Present day efforts at multilateral arms control or arms control to incorporate emerging technologies are understandably challenging when seen through such a historical lens.

The book's second theme is an existential one for nuclear scholars: why do we write? Perhaps a more important question is: *for whom* do we write? In American academia, it would seem nuclear scholars write predominantly for other nuclear scholars using quantitative methods in the pursuit of parsimonious, definitive, and 'scientific' answers. The academic culture prioritizes quantitative approaches and regressions over qualitative ones. "From what I gather," Gavin writes, "brave—and from a career perspective, sadly, unwise—is the Ph.D. student in international relations who undertakes a dissertation that does not include formal models, data sets, and multiple regressions" (70).

While nuclear scholarship may prove useful and important for policymakers, this typically requires translating academic pieces into digestible policy papers. Such a process entails stripping away the majority of equations and any hint of quantitative methodologies, transubstantiating theory into policy recommendations, and pitching to altogether different publication outlets. To be sure, many nuclear scholars have exceled at straddling both worlds, such as Jacquelyn Schneider, Michael Horowitz, Caitlin Talmadge, and Vipin Narang,<sup>4</sup> who contribute as much to *War on the Rocks* as to traditional peer-reviewed journals. These scholars, and others, demonstrate that the situation is not quite as dire as Gavin suggests; however, these efforts at bridging the gap is to the credit of individual experts rather than to academia, which rewards quantitative studies and publications with limited readership rather than policy recommendations.

Exploring gaps between policy and academia is not simply nuclear naval-gazing. Engaging with policy questions is unavoidable, given the stakes of nuclear policy, but some policy questions cannot be answered through coding. One of the most challenging questions for how we study and write about nuclear weapons is the moral one, or, contemplating nuclear use. Many of these questions get lost in the quantitative methods and terminology of nuclear scholarship and open up the field to the criticism that nuclear experts have forgotten the humanitarian consequences associated with nuclear weapons. Such a criticism is unfair, but understandable.

In highlighting these questions, Gavin is also issuing a call to action: "unless a greater effort is made to demonstrate that the field understands and empathizes with the concerns of those who make these terrible, stressful policies under extraordinary pressures, this work may be dismissed as not serious" (48). The solution, he suggests, is a historical approach that balances empirics with concepts, and a concerted effort by academics to engage with contemporary policy questions and pressures. Although this may be true for *some* nuclear questions, historical approaches alone are not necessarily the answer; methods should be tailored to questions. Additionally, some of these questions are so massive that they deserve multi-method scrutiny, and history should indeed be part of these explorations, along with regional studies, case studies, and, yes, perhaps also quantitative methods and the occasional regression.

Ultimately, *Nuclear Weapons and American Grand Strategy* is about bridging gaps, in the tradition of Alexander George.<sup>5</sup> This includes gaps between policy and academia, deterrence and disarmament, and quantitative and qualitative methods. And yet, in the process of identifying stove-pipes and suggesting strategies to overcome these, Gavin himself falls victim to a common, yet underappreciated gap: that between American nuclear policy and the "rest of the world." Admittedly, the

<sup>5</sup> Alexander George, *Bridging the Gap: Theory and Practice in Foreign Policy* (Washington, D.C.: US Institute of Peace Press, 1993).

<sup>&</sup>lt;sup>4</sup> Jacquelyn Schneider, "Blue Hair in the Gray Zone," *War on the Rocks*, 10 January 2018; Michael Horowitz and Lauren Kahn, "The AI Literacy Gap Hobbling American Officialdom," *War on the Rocks*, 14 January 2020; Caitlin Talmadge, "Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States," *International Security* 41:4 (Spring 2017): 50-92; Vipin Narang, "India's Counterforce Temptations: Strategic Dilemmas, Doctrines, and Capabilities," *International Security* 43:3 (Winter 2018/19): 7-52.

book's title clearly premises the subsequent analysis. Yet without explicitly acknowledging that these approaches are U.S.specific, the book runs the risk of exacerbating this division in scholarship. For example, British academia does not suffer from the same pressures to use quantitative methods as American universities; however, it does run the risk of preferring constructivism and turning a skeptical eye to structural approaches, as was evident in a 2013 debate between Ritchie and Susan Martin in *Contemporary Security Policy*.<sup>6</sup> Looking even further afield, how do nuclear scholars engage with policymakers in Russia? What is the impact of resource constraints on African countries' engagement with international initiatives and forums, such as the Nuclear Non-Proliferation Treaty (NPT)? Of course these questions are too big for a single volume, but the challenges of American nuclear weapons and grand strategy cannot be assumed to be universal.

*Nuclear Weapons and American Grand Strategy* teaches us something new about how strategies of inhibition are pervasive in U.S. nuclear policies across administrations. It can be seen in arms control agreements and in crisis management. But Gavin's more important contribution is in continuing the conversation about the role of nuclear scholarship in nuclear policy. As mentioned, at the outset the book admits some readers may find it frustrating. It is, but not for the reasons Gavin suspects. Rather, it is frustrating, as scholars, to be faced with such significant and massive questions and not have readily available answers.

<sup>&</sup>lt;sup>6</sup> Susan B. Martin, "The Continuing Value of Nuclear Weapons: A Structural Realist Approach", *Contemporary Security Policy* 34:1 (2013):174-194; and Nick Ritchie, "Valuing and Devaluing Nuclear Weapons", *Contemporary Security Policy* 34:1 (2013): 146-173.

# Response by Francis J. Gavin, SAIS-Johns Hopkins University

am grateful to the wonderful *H-Diplo* team, and to Jim Miller and Heather Williams for their generous and thoughtful reviews of my book, *Nuclear Weapons and American Grand Strategy*. These essays are especially welcome as Miller and Williams come from such impressive but different backgrounds. Dr. Miller is a distinguished national security policymaker, most recently serving as Undersecretary of Defense for Policy in the Obama administration, while Dr. Williams is a rising star academic working at Kings College London. That such deep thinkers from divergent backgrounds could find merit in the book is especially gratifying.

Indeed, I completely agree with their critiques. Williams suggests that our research should go beyond an American centric focus, because the "challenges of American nuclear weapons and grand strategy cannot be assumed to be universal." Miller quite reasonably points out that "more analysis of the post-Cold War world is especially important today." Finally, while both appreciate that the book is full of questions, the world of policy is about making decisions, even—or rather, especially—in the face of uncertainty.

While the focus of the book is on how nuclear weapons affect the grand strategy of the United States, the basic framework laid out in the book should apply to any state. There is little doubt that nuclear weapons profoundly alter incentives within the international system. That said, the bomb is still a tool of national statecraft and strategy, something nuclear scholars often forget when they concentrate too much on generalizable maxims. To understand nuclear behavior, an analyst must first understand the particular context and circumstances a state finds itself in, and make sense of how that state and its leaders think about the way in which nuclear weapons affect its interests. As *Nuclear Weapons and American Grand Strategy* makes clear, the United States implemented aggressive nuclear strategies as much to inhibit the nuclear ambitions of its allies as to deter its adversary, the Soviet Union. Great Britain and France, on the other hand, developed strategies that largely reflected their worldviews and interests as declining imperial powers who, after two devastating world wars, understandably distrusted the U.S. commitment to the postwar order and the defense of Europe. The People's Republic of China, to the surprise of many, has developed different nuclear strategies than those of the United States or the Soviet Union/Russia, based on its own assessment of China's interests, circumstances, and beliefs about the utility of nuclear weapons. States involved in decades-long territorial conflicts or disputed sovereignty claims—on the Korean peninsula, Israel, India and Pakistan—may possess a different view of purpose of nuclear weapons than states in more secure geopolitical positions.

Indeed, much of the intellectual architecture for how the nuclear studies community thinks about strategy, arms control, proliferation, and non-proliferation –as reflected in concepts like strategic stability, inadvertent escalation, compellence, resolve and the credibility of commitment, etc.—emerged from a unique historical milieu: American think tanks and universities from the late 1950s onward, dealing with Cold War issues that, as time has gone on, seem increasingly *sui generis*. Thomas Schelling and his colleagues, for example, were deeply influenced by a historical situation that, in retrospect, looks quite strange and unsettling: trying to formulate a credible nuclear strategy for a divided NATO alliance to deter Soviet coercion of a city 100 miles away from any friendly military force. Preventing a Warsaw Pact move on the isolated enclave of West Berlin while keeping the Federal Republic of Germany in the Western Alliance without it seeking its own nuclear weapons, all without causing World War III, was daunting. These strategies were developed with the recent memory of both surprise attacks and murderous, fully mobilized wars of conquest fought by totalitarian states. It is fair to question whether the insights developed by Schelling and the other so-called Wizards of Armageddon, developed at an especially harrowing and unusual time, have as much purchase in the world we find ourselves in today.<sup>12</sup>

What is the role for nuclear weapons today, both in American grand strategy and in world politics? This is another area where the historical approach generates more questions than answers. The very nature of contemporary state power and purpose seem different than at the start of the nuclear age. In 1950, Europe and Germany were divided, and recent global politics had been shaped by world wars, imperialism, and ideological extremism. Nuclear weapons helped solve the major problem plaguing international relations: invasion and conquest. In 2020, needless to say, we live in a much different world.

<sup>&</sup>lt;sup>12</sup> Fred Kaplan, *The Wizards of Armageddon* (New York: Simon & Schuster, 1983).

On the one hand, it is not clear what role nuclear weapons play in an international system that is increasingly challenged less by conquest than by transnational threats such as the devastating COVID-19 crisis, climate change, economic volatility, or disinformation. On the other, there are those who believe that with the return of great power competition and rapid technological change, nuclear weapons have a renewed salience.

Which view about the future is correct? At the cost of over 1 trillion dollars, the United States is planning to modernize its nuclear forces in the next few decades. This effort will focus less on raw numbers than on characteristics—speed, stealth, accuracy, mobility, miniaturization, and command, control, communications, and intelligence capabilities—that arguably make the use of the bomb more credible. On the other side of the ledger are shifting global norms against not only nuclear use, but nuclear possession. One does not have to be a wide eyed idealist to wonder what this massive investment in nuclear weapons provides to the United States and to question whether these resources might be dedicated to tools that better advance American interests in the world. This gets to Williams's excellent question of for whom and why do we write. Excellent scholarship is needed to interrogate and explore these complex questions, in order to help those in charge choose wisely.

Making foreign policy and national security decisions is very difficult, since the future is uncertain and the consequences of our actions unknowable. This is especially true of nuclear weapons, where we intuit, correctly, that they have transformed questions of war and peace. We simply can't prove how exactly, and whether or not they will continue to function in the same way. Understanding nuclear behavior is a methodological nightmare because few nations possess nuclear weapons and only one has used them. All of us who study nuclear weapons are, at heart, historians of something that, thank God, has never happened—thermonuclear war. Given the consequences, asking more questions and demonstrating more humility are arguably not bad traits.