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INTRODUCTION BY JAMES J. WIRTZ, NAVAL POSTGRADUATE SCHOOL

Since the dawn of the nuclear age, three distinct approaches to nuclear strategy – disarmament, denial, and deterrence – have waxed and waned in importance as guides to US doctrine and policy.¹ Although champions of each of these approaches sometimes defend their position as if it represented the one true religion, each of these strategies can be more or less effective and appropriate depending on the circumstances. As David A. Cooper suggests, changes in the strategic setting can vector US policymakers towards one of these strategies, despite the fact that the other two competing approaches never really fall completely outside the realm of policy debate or plausibility.

In the immediate post-war years, disarmament took center stage as the Harry S. Truman administration advanced the Acheson-Lilienthal and Baruch plans. The United States proposed placing nuclear materials and technology under international control as a way to bottle-up the nuclear genie, while suggesting international control would be a prelude to destroying the few nuclear weapons America possessed.² This initial flirtation with disarmament as the best way to deal with nuclear weapons ended quickly, however. The international climate created by a brewing Cold War simply did not support ambitious plans for nuclear disarmament.

Soviet reluctance to grant the United States even a temporary nuclear monopoly, combined with the outbreak of the Korean War, started a shift toward the strategy of denial as the driving force behind US nuclear doctrine. Exemplified by the work of Herman Kahn and today by the writing of Keith Payne among others, denial posits that the best deterrent lies in escalation dominance, that is, a situation in which the move from conventional war to limited nuclear war to the massive use of nuclear weapons works to the opponent's significant disadvantage. A denial strategy would also call for the ability to fight and win a nuclear war, which is defined as achieving militarily and politically significant damage limitation in a nuclear exchange.³ This war-winning capability would also serve as a superb deterrent because it would give an opponent little reason to use nuclear weapons first while holding out the promise of limiting damage in the event of an unfortunate failure of deterrence.

As the Cold War dragged on into the 1960s, however, most strategists recognized that denial strategies were increasingly futile as the size and 'survivability' of the Soviet nuclear arsenal increased. As Mutual Assured Destruction (MAD) emerged, deterrence and associated notions of strategic stability began to eclipse denial in US nuclear doctrine. Strange, counterintuitive ideas – the “diplomacy of violence,” “threats that leave something to chance,” the “stability-instability paradox,” and the “Nuclear Revolution” – were advanced to explain the essence of strategy under MAD and the impact of nuclear weapons on international affairs generally.⁴ Deterrence was dominant. Disarmament advocates were often depicted

¹ James J. Wirtz, “Disarmament, Deterrence, and Denial,” *Comparative Strategy* 24:5 (2005): 383-395.
DOI:10.1080/01495930500448830

² David W. Kern, Jr., “The Baruch Plan and the Quest for Atomic Disarmament,” *Diplomacy & Statecraft* 21:1 (2010): 41-67.
DOI: 10/1080/09592290903577742

³ Herman Kahn, *On Thermonuclear War* (Princeton: Princeton University Press, 1960); Keith B. Payne, *The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century* (Fairfax: National Institute Press, 2008); and Mathew Kroenig, *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters* (New York: Oxford University Press, 2018).

⁴ Thomas C. Schelling, *The Strategy of Conflict* (Cambridge: Harvard University Press, 1960); Thomas C. Shelling, *Arms and Influence* (New Haven: Yale University Press, 1966); Glen H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton: Princeton University Press, 1961); and Robert Jervis, *The Meaning of the Nuclear Revolution* (Ithaca: Cornell University Press, 1989).

as well-intentioned nincompoops, while those championing denial appeared extreme and dangerous as they bemoaned the US abandonment of missile defenses deemed cost-ineffective at the margins.

As Cooper rightly notes, the rise of MAD also was accompanied by new thinking about an old subject – arms control. Influenced by the work of Thomas Schelling and Morton Halperin, this new thinking posited that arms control was intended to reduce “the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it.”⁵ The desirability and utility of Cold War arms control remains a contentious issue, which is exemplified by Colin Gray’s aphorism: “arms control works best when least needed.”⁶ Nevertheless, even critics had to admit that arms control negotiations provided an important forum for exchanging ideas about deterrence strategy and force structure, helping to reduce suspicion while creating mutual understanding of the concerns that animated Moscow and Washington. Initially producing the strategically unimportant 1959 Antarctic Treaty, then the environmentally important 1963 Limited Test Ban Treaty, and then the 1972 SALT I Accord, which included the ABM Treaty that codified a Soviet-American agreement not to engage in an offense-defense arms race, arms control negotiations were a priority for US foreign and defense policy from the 1960s through the early twenty-first century.

Following the end of the Cold War, interest in arms control, the salience of the nuclear balance as a political issue, and the perceived role of a nuclear arsenal in providing national security waned rapidly. Indeed, nearly twenty years ago, observers were already wondering “whatever happened to arms control.”⁷ The number of strategic nuclear warheads deployed by the United States and Russia declined by about 85% from the late 1980s, several nuclear delivery systems were retired, and some types of nuclear weapons, for example the tactical nuclear weapons carried by the US Navy, were eliminated completely. This long and powerful trend towards nuclear disarmament was deeply rooted; it culminated in a stirring speech delivered in 2009 by President Barack Obama in Hradcany Square, Prague. Obama pledged concrete steps to reduce the number and salience of nuclear weapons proclaiming “clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.”⁸ Disarmament had not only returned to dominance, but it was also succeeding in a way that probably would have surprised even Bernard Baruch.

This is the point in nuclear history at which *Arms Control for the Third Nuclear Age: Between Disarmament and Armageddon* begins to offer its most important message. It suggests that nuclear disarmament is no longer the dominant trend in international affairs or nuclear strategy. A third nuclear age has arrived. Denial strategies and an international setting that seems to favor damage-limiting, warfighting strategies are emerging. Cooper notes that emerging technologies – hypersonic bodies, cyber weapons, autonomous vehicles, robotics, artificial intelligence, or even heretofore unimagined capabilities – might be integrated into nuclear force postures, leading to action-reaction arms races or an accelerating competition between offensive and defensive weapons systems. The fact that this arms competition is occurring in a trilateral setting involving Russia, China, and the United States, while entailing significant and global multilateral consequences, makes the situation even more complicated. Cooper suggests that the world is hurtling towards a nuclear-technological-political setting that is infinitely more complex than the simpler, bi-polar type of Armageddon we confronted during the Cold War.

⁵ Schelling and Morton Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961): 2.

⁶ Colin S. Gray, *House of Cards: Why Arms Control Must Fail* (Ithaca: Cornell University Press, 1992).

⁷ James J. Wirtz, “Review: Whatever Happened to Arms Control?” *International Studies Review* 6:3 (September 2003):390-392.

⁸ Daryl G. Kimball, Obama’s Prague Agenda Two Years On,” *Arms Control Association* April 4, 2011, <https://www.armscontrol.org/blog/2011-04-04/obamas-prague-agenda-two-years>.

Cooper sees 'integration' of novel conventional and techno weapons into nuclear force postures as a looming threat that will destabilize deterrence, especially in a trilateral setting with multilateral consequences that is highly unstable, to say the least. His solution is a return to arms control as a way to moderate this looming arms race. Nevertheless, history suggests that Cooper might be a 'nuclear age too early' in making this suggestion; the world will have to experience the proliferation of new technologies and a rapid nuclear buildup before a trilateral and multilateral situation of MAD emerges that will lead all concerned back to the negotiating table. Whether or not arms control would even be part of this fourth nuclear age of deterrence dominance remains problematic. It was difficult enough to get two parties to agree on the technical and political balance of forces during the Cold War. It is hard to see how a workable assessment of the nuclear balance will emerge when multiple parties, who possess asymmetric force structures and different conceptions of threat, tally the balance.

Cooper's description of the nuclear past and future is provocative. It is reviewed here by three leading scholars who have written extensively about nuclear matters in general and arms control and arms racing in particular.⁹ Nancy Gallagher takes a critical view of Cooper's analysis by not only questioning the accuracy of his historical narrative, but also by raising theoretical and policy concerns about the notion that arms racing is a necessary prequel to arms control. Jeffrey Larsen, on the other hand, is highly complementary of Cooper's effort. He does note, however, that Cooper treats an arms-racing future almost as a *fait accompli*. Instead, Larsen suggests that it still might be possible to head off some of the more pernicious aspects of this trilateral nuclear-technological-political competition. Like Gallagher, our third contributor, Thomas Mahnken, also objects to Cooper's reliance on arms racing as a metaphor for the rise of Cold War nuclear arsenals. Despite the enormous effort devoted to the subject, notes Mahnken, arms racing was always more of a heuristic than a reality. Mahnken also suggests that today's military developments might not actually represent an 'arms race.'

Cooper offers a measured response to his critics, so it is probably best to allow the reader to judge how well he parries their critique. Nevertheless, his response does highlight that one's attitude towards denial (hawks), deterrence (owls), and disarmament (doves) influences how one perceives both the role and utility of arms control. Indeed, it will be interesting to see how various arms control initiatives might emerge over the coming years, and which of these strategic perspectives will champion arms control as a way to bolster US national security and international stability.

Arms Control for the Third Nuclear Age: Between Disarmament and Armageddon is an important book that describes a world in which the nuclear balance is again a driving force international affairs. One hopes that this future will never come to pass. Nevertheless, there are no votes associated with these issues at the moment; hence, official Washington sleeps through the dawn of the third nuclear age.

Participants:

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⁹ Nancy W. Gallagher, *The Politics of Verification* (Baltimore: Johns Hopkins University Press, 1999); Jeffrey A. Larsen (ed.), *Arms Control: Cooperative Security in a Changing Environment* (Boulder: Lynne Rienner, 2002); and Thomas G. Mahnken, *Strategy in Asia: The Past, Present and Future of Regional Security* (Stanford: Stanford University Press, 2012).

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REVIEW BY NANCY GALLAGHER, UNIVERSITY OF MARYLAND

In *Arms the Control for the Third Nuclear Age*, David Cooper argues that using arms control to enhance deterrence stability could do more for U.S. national security in a multipolar world of rapid technological change than would either unconstrained competition or global denuclearization. Having worked on these issues at the Department of Defense and top professional military education institutions, Cooper has the knowledge and standing to argue for cooperative constraints on great-power competition using reasoning that could gain support from some of his more hawkish colleagues, a domestic political requirement for sustaining any nuclear risk reduction strategy. Yet, the book makes the prospects for significant, verifiable cooperation bleaker than necessary by conflating two different logics for arms control to stabilize deterrence and reinforcing common misconceptions about arms control with Russia and China.

Cooper, like most arms control experts, argues that U.S. policy from the 1960s through at least the early 1990s was informed by a single set of ideas about cooperative nuclear risk reduction. He credits Thomas Schelling as the main intellectual force behind “classical arms control theory”¹ (39-40). Cooper uses the hawks-owls-doves trilogy to depict Schelling’s “hard-nosed concept of adversarial arms control” as the sensible middle ground between fruitless disarmament negotiations and reckless arms racing, twin aspects of U.S. nuclear policies through the mid-1950s. He credits the Kennedy administration with operationalizing Schelling’s insight that the superpowers had a shared interest in modest cooperative measures to make deterrence more stable by reducing incentives to strike first or escalate rapidly, ensuring that both sides had secure retaliatory capabilities, and minimizing chances of misperception, miscommunication, or miscalculation leading to a nuclear war that neither side really wanted. According to Cooper, though, early efforts to negotiate bilateral arms control had “disappointing results” because Soviet “refusal to countenance intrusive verification” ruled out the most significant options considered: a ban on missiles with multiple warheads, reciprocal cuts to existing nuclear forces, and elimination of anti-ballistic missile systems (89).

Cooper argues that the “golden age of arms control” occurred briefly after President Reagan “returned arms control to its hard-nosed conceptual roots” by using a major arms build-up to convince the Soviets to accept deep cuts in their most destabilizing systems and allow highly intrusive verification, ending the Cold War (93-109). Cooper laments that many hawks who had supported adversarial arms control during the Cold War decided (for strategic or political reasons) that the sole remaining superpower need not, and should not, let treaties limit its freedom to develop, deploy, and use military capabilities as it saw fit. These hawks joined forces with doves to shift the emphasis of post-Cold War policy from incremental arms control with Russia to radical denuclearization through a combination of coercive counter-proliferation and a “quixotic” quest for global nuclear disarmament (121-131). He maintains that successive U.S. administrations tried to reduce the role of nuclear weapons in U.S. security policy, and ignored major nuclear modernization programs in Russia and China. They leveraged rapid advances in numerous emerging technologies, including hypersonic delivery systems, disruptive cyber operations, and anti-satellite weapons, to offset U.S. conventional military superiority, creating a situation in which the strategic balance is once again “up for grabs” (163).

Cooper argues that structural factors make the current resurgence of great-power competition even more likely to result in nuclear war than the bilateral arms race of the 1950s and 1960s was, unless the United States, Russia, and China negotiate verifiable limits on emerging capabilities that reduce first-strike, crisis, and escalation stability. Yet, Cooper firmly believes that neither Russia nor China will agree to arms control on terms that enhance American security unless the United States returns to the Reagan-era strategy of “arms racing to arms control” (174-5). This suggests that the United States must do everything in its power to regain quantitative and qualitative superiority in every strategic emerging technology and deployed weapons system.

¹ The most comprehensive yet concise presentation of Schelling’s views on arms control is Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961).

I share Cooper's conviction that current geopolitical and technological conditions create an urgent need to rebuild domestic and international consensus on arms control to reduce nuclear risks. Yet, the approach he recommends to rebuild the necessary level of bipartisan support in the United States would almost certainly reduce Russian and Chinese interest in the types of cooperation that Schelling and others who share his logic for the use of arms control to stabilize mutual deterrence *would* consider most desirable.

One problem is that Cooper's argument conflates two different logics for arms control to enhance strategic stability that rest on contradictory assumptions about deterrence. Beneath the broad bipartisan consensus on combining a safe, secure, and effective deterrent with verifiable arms control to reduce the costs and risks of deterrence² lies a long-standing argument between policymakers, experts, and activists who interpret these phrases based on an Assured Destruction (AD) approach to deterrence and those who use a Damage Limitation (DL) approach.³

Schelling, co-author Morton Halperin, Hedley Bull, and other academic strategists and scientists who contributed to the Cambridge community logic for arms control thought that the unprecedented destructive power of thermonuclear weapons on long-range delivery systems gave the superpowers a strong shared interest in "avoidance of a war that neither side wants, in minimizing the costs and risks of the arms competition, and in curtailing the scope and violence of war in the event it occurs."⁴ They believed that neither side would want to start a nuclear war so long as both sides had a secure second-strike capability that could cause unacceptable destruction in response. They also hoped that the risks of inadvertent deterrence failure would be low if both sides had reliable command, control, communication, and intelligence (C³I) systems that were needed to avoid miscommunication, misperception, miscalculation, and uncontrolled escalation. They saw arms control as a way to increase support for meeting these requirements, and to discourage, limit, or prohibit capabilities that made it harder for either side to meet them (for example, offensive systems optimized to destroy the other side's nuclear weapons, leadership targets, and C³I, and missile defenses intended to neutralize whatever retaliatory capability remained after a first strike).

This logic informed a wide array of arms control efforts, from the trilateral test ban negotiations started under the Eisenhower administration, through the 1963 Limited Test Ban Treaty, the 1967 Outer Space Treaty, the 1968 Nonproliferation Treaty, the 1972 Anti-Ballistic Missile (ABM) Treaty, and the two accords reached during Strategic Arms Limitation Talks (SALT I and II). In addition to these capabilities-based agreements, the logic also fostered understandings and agreements about responsible versus reckless behavior, including the 1963 Hotline agreement and the 1972 Incidents at Sea accord.

Although the superpowers still competed for advantage in numerous other realms, they could cooperate to make an Assured Destruction (AD) form of deterrence more stable for two reasons.

Both had more than enough nuclear weapons to cause unacceptable destruction in retaliation after a nuclear attack (functional parity) long before the Soviets reached numerical parity with the United States in the late 1970s. Therefore, negotiators were more concerned with reducing the costs and inadvertent risks of deterrence failure than with which side had quantitative or qualitative superiority in every aspect of their nuclear postures. This made the positive-sum parts of arms control more salient than the zero-sum aspects, which fostered flexibility on format (legally binding or voluntary), terms

² Steven Kull, et al., "Americans on Nuclear Weapons," Center for International and Security Studies at Maryland (May 20, 2019), <https://cisssm.umd.edu/research-impact/publications/americans-nuclear-weapons>.

³ Nancy W. Gallagher, "Rethinking the Unthinkable: Arms Control in the Twenty-First Century," *The Nonproliferation Review* 22:3-4 (2015): 469-498.

⁴ Schelling and Halperin, *Strategy and Arms Control*, 1.

(specific treaty provisions or normative understandings), and compliance management mechanisms (agreed verification procedures and processes for addressing compliance concerns).

Because both sides had confidence that arms control would strengthen, not undermine, their secure retaliatory capability, they could also be more flexible about verification than they had been in earlier General and Comprehensive Disarmament talks. From 1945-1958, the superpowers had negotiated for public relations reasons, then tried to blame the other side for failure to reach an agreement that neither side really wanted by taking reasonable-sounding, yet rigid and diametrically opposed positions on verification. The United States rejected any constraints on its nuclear capabilities until after Soviet leaders had allowed intrusive inspections and other information-collection measures to be conducted long enough to convince the world that the verification arrangements would be “foolproof.” Soviet officials responded that they could not let international inspectors roam freely behind the Iron Curtain, exchange blueprints of all military bases, or to provide other information about their nascent nuclear program until political relations had improved enough to obviate concerns that the United States would use that information to plan a surprise attack, as the Germans did in Operation Barbarossa.

By the 1960s, both superpowers considered the risks of unconstrained nuclear competition to be much greater than the risks of cheating or collateral information collection associated with modest arms control measures to stabilize mutual deterrence. The United States decided that verification would be “adequate” so long as it could detect militarily significant cheating in time to respond before the Soviets gained an important advantage. This standard could be met primarily through national technical means (NTM) if AD conditions meant that neither side could “win” a nuclear war in any meaningful sense regardless of which side had quantitative or qualitative superiority in each weapon system. The Soviets did agree to some on-site inspections, in-country monitoring stations, data exchanges, and other cooperative measures when U.S. negotiators worked out managed-access provisions that convinced the Soviets that this was not just espionage in disguise.

As Cooper recounts, supporters and critics of the SALT process were disappointed by its results. Those who believed in an AD logic for deterrence liked many aspects of these agreements, but wished they had done more, such as prohibit missiles carrying multiple independently targetable re-entry vehicles (MIRVs) or completely ban BM systems. Critics like Paul Nitze, who was part of the U.S. negotiating team, then lost some inter-agency arguments, left government, and led opposition to SALT II ratification, complained that the final terms lacked “effective” verification capable of detecting even minor violations, and failed to keep the Soviets from widening their lead in land-based missiles, especially “heavy” intercontinental ballistic missiles (ICBMs) that could carry many MIRVs.⁵ The harshest opponents, like Colin Gray (who is referenced approvingly throughout this book starting on page 5) saw arms control as a fool’s errand. He maintained that it had lulled the West while the Soviets used treaty loopholes and violations to gain enough of strategic advantage to think they could fight and win a nuclear war.⁶

Cooper maintains that “Soviet refusal to countenance intrusive verification was *the* limiting factor” for what arms control could achieve during détente (89). I would argue that a greater imitation was internal pushback by U.S. policymakers, military official, and strategists who reasoned about arms control using what I term a DL logic for deterrence and Cooper calls a “warfighting” approach (58). Then and now, those who support this form of deterrence assume that Communist leaders are inherently aggressive and willing to take large risks to gain small advantages that can be leveraged for bigger gains over time. They believe that the United States and its allies need quantitative and qualitative superiority on every step of the escalation ladder to discourage nuclear-armed adversaries from making coercive threats (nuclear blackmail, grey zone activities below the threshold of war), deter aggression, and win even a nuclear war at an acceptable cost if deterrence fails. The types of weapons considered most destabilizing to a purely punitive form of AD deterrence – offensive systems optimized to destroy military and leadership targets in a pre-emptive first strike and missile defense – are the most desirable

⁵ McGeorge Bundy, *Danger and Survival: Choices about the Bomb in the First Fifty Years* (New York: Random House, 1988), 550-567.

⁶ Colin Gray, *House of Cards: Why Arms Control Must Fail* (Ithaca: Cornell University Press, 1993).

for a DL strategy. That approach is sometimes called “deterrence by denial” because it seeks to take away the other side’s ability to harm the United States or its allies.

Although U.S. policy pronouncements emphasize retaliatory deterrence, U.S. strategic doctrines, acquisition programs, and operational plans have almost always been driven by damage limitation aspirations. This explains the strong internal opposition to banning MIRVs when the United States had a lead in this technology, and to ending efforts to find a cost-effective form of missile defense. It accounts for Congressional objections to the SALT I provision allowing the Soviets to have more ICBMs than the United States could have, even though the United States had more than enough second-strike capability on submarine-launched ballistic missiles (SLBMs), and a large advantage in strategic bombers. It also illuminates why SALT II opponents, including President Ronald Reagan, insisted that Soviet leaders would cheat at every opportunity, could gain strategic advantage from the smallest violation, and might attack on vulnerable American ICBMs, in hopes that U.S. leaders would surrender rather than retaliate with their remaining SLBMs and bombers because the Soviet forces could destroy American cities in return (the Window of Vulnerability theory) – none of which turned out to be true.

Reagan returned to the practice used by Paul Nitze in the 1950s of making “peace through strength” arguments in order to increase domestic and allied support for a major U.S. military build-up by making it appear necessary to compel Soviet acquiescence to reductions in their most threatening systems and intrusive on-site inspection. According to Cooper, “interviews with dozens of former officials – including many who were directly involved -- reveal a widespread conviction” that Reagan’s deployment of INF missiles in Europe, his Strategic Defense Initiative (SDI), and other aspects of his accelerated military build-up “were what incentivized Moscow to get serious about arms control” (99). This self-congratulatory story is central to Cooper’s claim that the only way to get Russia and China to accept verifiable arms control is to pursue a dual-track strategy of building up U.S. weapons until they agree to U.S. terms (184).

That recommendation deserves careful scrutiny because common wisdom is not always true. Cooper acknowledges that “some experts caution that there is no definitive causal proof that it was dual-track bargaining that led previously to successful arms control outcomes or, if so, how important this was relative to other factors” (174). Amy Woolf, the Congressional Research Service expert on strategic arms control that he references here, is actually very skeptical about the bargaining chip rationale used to persuade pro-arms control members of Congress to support higher spending on weapons they view as unnecessary and destabilizing. In prominent historical cases where U.S. spending on strategic capabilities preceded agreement on arms control, the expenditures were neither necessary nor important. “Arguing that the United States must always negotiate from a position of strength to achieve its preferred arms control outcome,” she concludes, “serves less as an explanation of the conditions that contributed to arms control in the past than as an excuse for continued funding for all nuclear weapons programs in the future.”⁷

Pavel Podvig’s analysis of declassified Soviet documents shows that Reagan-era programs like SDI actually made it harder for other reasons for the new Soviet leader, Mikhail Gorbachev, to do what he wanted to do: use arms control to fundamentally change the Soviet Union’s relationship with the West.⁸ Gorbachev made major unilateral reductions to conventional military forces, destroyed many more intermediate-range missiles than the United States did to get to zero, and accepted intrusive verification because those steps fit with his ideas about cooperative security. Gorbachev refused to go along with Reagan’s proposal to sunset the ABM treaty after 10 years of SDI development because he and his generals still firmly believed that limits on strategic defense were essential to strategic stability, especially if on-going U.S. modernization efforts meant that the U.S. would have more highly accurate weapons optimized for pre-emptive attack against a smaller Soviet arsenal. Given the state of superpower relations before Gorbachev took office, it is likely that if his predecessor had been

⁷ Amy Woolf, “Bargaining with Nuclear Modernization: Does it Work?” *Arms Control Today* (October 2020), 12.

⁸ Pavel Podvig, “Did Star Wars Help End the Cold War?” *Science and Global Security* 25:1 (Winter 2017), 3-27.

replaced by somebody who thought in the manner that Reagan assumed all Communist leaders thought, his Peace through Strength strategy would have raised nuclear risks without advancing arms control.

Cooper's claim that after the Cold War, the United States shifted its focus from arms control to nonproliferation and disarmament (117) is only partially true. As the threat of war between existing nuclear weapon states receded, concerns about proliferation did grow, particularly after international inspectors who traversed Iraq after the Gulf War found that Iraq had made more progress in a clandestine nuclear weapons program than either the International Atomic Energy Agency or U.S. intelligence realized. President Bill Clinton tried to advance a number of important arms control initiatives, including a third round of strategic arms reductions and U.S. ratification of the 1996 Comprehensive Test Ban Treaty (CTBT), but was blocked by unilateralists in Congress. President George W. Bush did reduce some deployed strategic offensive weapons that exceeded U.S. deterrence requirements. This hardly counts as "disarmament," though, because his administration withdrew from the ABM Treaty, tried to turn a very limited missile defense program into a comprehensive layered global system, deployed long-range precision-strike conventional weapons that could fulfill many missions that had been reserved for nuclear weapons, and invested heavily in a "responsive" nuclear infrastructure that could rapidly increase the size of the U.S. arsenal if desired. President Obama elevated the global elimination of nuclear weapons as an eventual goal, but all of the interim steps outlined in his Prague speech were modest arms control measures⁹. His administration also committed to a massive nuclear modernization program during the New START ratification process, moved forward with a phased approach to missile defense, and used emerging technologies to make U.S. conventional military capabilities even more formidable than they were before.

Seen in this context, Russian and Chinese military modernization programs are consistent with the stated desire of the leaders of those two countries to ensure that U.S. offensive and defensive weapons cannot neutralize their nuclear deterrents. Cooper notes that "knowledgeable insiders see Russian and Chinese strategic modernization over the past decade as a direct reaction to U.S. missile defense programs" (136). He also acknowledges that they started the strategic modernization programs to "counter the vast overmatch that the United States enjoyed in conventional military strength (142). Yet, he often portrays Russian and Chinese advances as dangerous evidence of aggressive intentions, not defensive attempts to preserve a secure second-strike capability even as the U.S. makes advances in space-based tracking and targeting of mobile missiles, precision targeting of conventional global strike weapons, cyber operations rumored to disable missiles before or after launch, and much more.

The prospects for arms control involving the United States, Russia, and China will be much better if all three countries base their policies on some version of AD deterrence rather than on aspirations for superiority in every type of strategic offensive and defensive capability. Contrary to the many alarmist claims included in this book, there is no hard evidence that either Russia or China seek to match or surpass U.S. strategic capabilities. For example, Cooper quotes the opinion of Robert Joseph, a Bush administration official, that "China is laying the groundwork not for future nuclear parity but for a sprint to superiority" (146), coupled with another source that makes the same unsubstantiated assertion. Cooper also maintains that "Russia has a massive missile defense program of its own – aiming to field thousands of interceptors – that is fully integrated with air defense and anti-satellite systems" (143), but the source he cites clearly states that Russia's air-space war concept is poorly defined and that "there was, and still is, no defense against a massive missile strike."¹⁰

It is not clear in the book whether Cooper agrees with Schelling that arms control should be used to stabilize deterrence by ensuring that all nuclear powers have secure second-strike capabilities and reliable C³I systems, minimize weapons optimized for short-notice attacks on military and leadership targets, accept limits on missile defense, and maintain joint mechanisms

⁹ Barack Obama, "Remarks in Prague, Czech Republic," (April 5, 2009), <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-barack-obama-prague-delivered>.

¹⁰ Alexey Arbatov, Vladimir Dvorkin, and Petr Topychanov, "Entanglement as a New Security Threat: A Russian Perspective," in James Acton, ed, *Entanglement: Chinese and Russian Perspectives on Non-Nuclear and Nuclear Risks* (Washington, D.C.: Carnegie Endowment for International Peace, 2017), 15.

for incident avoidance, crisis management, and conflict de-escalation. Many of the arms control measures that he recommends fit well with this conception. Yet, much of the argumentation used in the book accords more closely with a DL approach to deterrence and with the misguided belief that the more offensive and defensive capability the United States has, the more likely Russia and China are to make major concessions and accept intrusive inspections. Russian President Vladimir Putin and Chinese President Xi Jinping are not Mikhail Gorbachev, and no amount of arms racing will change that.

Cooper posits that Russia is over-eager for arms control to constrain American advantages, and that China is unwilling to accept that using verifiable arms control to enhance deterrence stability is a requirement for being a “responsible” great power. He insists that strategic arms control must henceforth be trilateral, and wonders “how to find a balance between Russia’s desire to control everything and China’s desire to control nothing” (181). This assumption that China wants to “free ride” on U.S.-Russian arms control efforts while avoiding any limitations or inspections of its own nuclear program (168) is another common, but unsubstantiated view that makes the prospects for cooperation seem bleaker than they need be.

Suffice it to say that China has participated in numerous arms control, non-proliferation, and nuclear security endeavors since the end of the Cold War, and before. Most notably, China made significant concessions to bring CTBT negotiations to a successful conclusion, even though ending nuclear explosive testing would disadvantage it more than the United States and Russia. China agreed to host in-country seismic stations and other assets in the International Monitoring System. It also acquiesced to rules for on-site inspections that satisfied U.S. verification requirements.¹¹

What made China willing to participate in arms control then, and could do so again, was the opposite of the “arms racing for arms control” approach that Cooper recommends. It was Chinese leaders’ assessment that the United States and Russia were moving towards a minimum nuclear deterrence posture like China had, reducing pressure for changes to China’s weapon designs that would require further testing, and increasing incentives for China’s active involvement in cooperative security institutions. China still says that it will ratify the CTBT as soon as the United States does. This would be a valuable addition to Cooper’s list of “opening gambits” (190-3).

¹¹ Nancy W. Gallagher, “China on Arms Control, Nonproliferation, and Strategic Stability”, in James M. Smith and Paul J. Bolt, ed., *China’s Strategic Arsenal* (Washington, D.C.: Georgetown University Press, 2021), 195-240.

REVIEW BY JEFFREY A. LARSEN, NAVAL POSTGRADUATE SCHOOL

This is one of the most important books on deterrence, strategic issues, nuclear weapons, and arms control to be published in many years. The scholarship reflected in this book is superior. The author builds on his expertise garnered over a career in the arms control business and as a professor at the Naval War College. From this deep well of knowledge, plus excellent archival research, he has developed lessons from Cold War experience and practical recommendations for restarting arms control today. The reason this is necessary, says David Cooper, is that “We are in the nascent stages of an unprecedented multipolar arms race that is being fueled by broader geopolitical and ideological tensions during the widely presumed transition to a competitive multipolar international system” (163).

The audience for this book will be a wide selection of professional policy makers and analysts in the fields of nuclear weapons, deterrence, national security, international relations, and arms control. This includes graduate students and faculty in these fields. Currently available texts on arms control were all written a decade ago, a time when the West still saw Russia as a burgeoning democracy and strategic partner of NATO, and China as a long-term future competitor. They are therefore woefully out of date regarding today’s changing international security environment.¹

This work is critically important for policy makers as they try to understand how to deal with the changing international security environment in which the United States will be facing not one, but two nuclear-armed great-power adversaries. The lessons of the Cold War will provide the necessary historical education, and the discussion about the nuances and challenges of today’s network of nuclear adversaries, both large and small, will help them understand the critical nature of decisions related to America’s security. The Cold War is back, and this book does an excellent job making that reality starkly clear. The author’s primary message is that “The international denuclearization architecture that was designed and led by the United States after the Cold War was never designed to manage an arms race between major nuclear powers. It assumes a benign and globalizing world order in which nuclear weapons play a receding role in international relations. It is therefore unsuited to mitigating the dangers of the uncontrolled multipolar nuclear arms race that is currently gathering momentum—fueled by game-changing technologies and a core tripolar geostrategic rivalry” (148).

In five clearly organized and logical chapters the book moves from an introduction to the international system and nuclear competition in the nascent third nuclear age, to the theory of arms control and how it differs from disarmament, to the history of arms control’s success in damping the dangers of the Cold War, to how and why the emphasis of arms control changed to focus on nonproliferation and a flirtation with disarmament in the post-Cold War period, and finally to the new period of growing great power competition and the complications of nuclear modernization by everyone, including the smaller nuclear weapons states. The book concludes by reiterating its primary theme: that such a world will be more akin to the 1950s than to the 2000s, and therefore the United States should consider arms control as a tool to ensure strategic stability and prevent nuclear war. The key to this happening will be to find a way to bring China to the negotiating table in trilateral discussions with the United States and Russia.

The author makes a strong case for the fact that the world is in a more dangerous place than most people realize. As he writes, “The prospect of nuclear multipolarity should be extremely worrisome even for those who until now may not have been prone to nuclear alarmism. Clear and present nuclear dangers have not featured prominently in the official or public imagination for almost a quarter century... After three lulling post-Cold War decades of relative nuclear quiescence, during which the Cold War’s existential nuclear shadow seemed largely to recede, the United States and its allies now confront a daunting array of emergent nuclear challenges. Taken together these are unprecedented in potential scope, complexity, and peril” (5). There are several reasons for this. First, as Cooper correctly points out, several nuclear experts forecast that in the

¹ For example, Jeffrey Larsen and James Wirtz, *Arms Control and Cooperative Security* (Boulder: Lynne Rienner, 2009); Michael Levi and Michael O’Hanlon, *The Future of Arms Control* (Washington, D.C.: Brookings, 2004); Steven Pifer and O’Hanlon, *The Opportunity: Next Steps in Reducing Nuclear Weapons* (Washington, D.C.: Brookings, 2012); and Richard Dean Burns, *The Evolution of Arms Control: From Antiquity to the Nuclear Age* (Santa Barbara: ABC Clío, 2009).

unipolar moment that followed the Cold War, the United States would face not a benign world, but one in which near-peer competitors and upstart states alike would pursue the nuclear option as an asymmetric response to America's lead in advance conventional weapons and aerospace dominance.² Second, U.S. policy after 9/11 became regional in focus, rather than global. With the seeming end of the threat from Russia, the United States allowed its nuclear and arms control attention to be diverted to lesser but seemingly more immediate challenges. At the same time, the two nuclear powers shifted from a mutual deterrence paradigm to what Cooper calls a nuclear disarmament paradigm.

After 2014, however, Russia once again required deterring, and the West was not ready to make that sudden policy shift. In his introduction the author recognizes that the notion that the world is facing a new nuclear arms race "has gone from controversial to cliché in the time it has taken to write this book," because Western leaders finally recognize that "For the first time since the end of the Cold War the major nuclear powers are all modernizing and expanding their nuclear arsenals and moving toward warfighting counterforce postures. For the first time since the Cold War, there is a race to develop game-changing strategic offensive capabilities and defenses against them" (132). He makes the correct parallel with today's events to the situation in the late 1950s and early 1960s, when classical arms control theory was conceived of as a way of managing nuclear competition.³ Unlike that earlier era, however, there is a dearth of arms control expertise working on the problem today.

In a carefully argued logical twist to how this happened, Cooper shows that at the same time that the United States was reducing its reliance on nuclear weapons and trying to convince the world to do the same, its increasing use of and dependence on conventional weapons resulted in the return of an even more complex nuclear world that it must deal with today. As the author puts it, "Welcome to the cusp of a third nuclear age of uncontrolled great power nuclear rivalry."

This leads to one of Cooper's important insights: that the world is moving away from unipolarity towards what he calls "asymmetric multipolarity" (10). This will have significant implications for systemic stability, especially when one factors China into the equation.

Cooper's discussion and graphics on current and potential nuclear dyads is also insightful. The danger is increasing complexity. As Cooper states, "We should expect *transregional arms racing* to cause unprecedented action-reaction instabilities" (23). Regional dyads will look more like adversarial chains, and the interlocking of those chains between regions will be more like a spider's web of deterrence relationships. If the world thought bipolar nuclear deterrence in the Cold War was challenging, he implies it has not seen anything yet. Perhaps the international system will have to adopt Kenneth Waltz's optimism that once all medium powers have their own nuclear arsenals, the world will be a safer place because everyone will be deterred from doing anything untoward.⁴

How bad can things get? According to the author, pretty bad: "a multipolar landscape featuring an intersecting web of regional, transregional, and global nuclear rivalries—involving various mixes of strategic and sub-strategic offensive nuclear systems and defenses against them—is likely to result in geostrategic instabilities that have been unknown in the nuclear age" (25). Yet, in the United States, the dominant post-Cold War fixation on smaller regional nuclear threats persists despite the re-emergence of great power nuclear competition. As anyone who has studied arms control in the past 25 years recognizes,

² See, for example, Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford: Stanford University Press, 2015).

³ The classic theoretical arms control books of the early nuclear age include Thomas Schelling and Morton Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961); Hedley Bull, *The Control of the Arms Race: Disarmament and Arms Control in the Missile Age* (New York: Frederick A. Praeger, 1961); and Harvey Averch, *Strategic Ambiguity, Asymmetry and Arms Control: Some Basic Considerations* (Santa Monica: RAND Corporation, 1963).

⁴ See Scott Sagan and Kenneth Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W.W. Norton, 2002).

Washington and its supporting analytic community have given little consideration to these potential changes to the international system. As a result, the United States is not prepared to deal with the new world. This leads Cooper to his core recommendation. Given the changing and increasingly dangerous world the United States might face in the near term, it needs a new approach—one that relies on traditional Cold War-style arms control, but with a modern and more adversarial approach that befits the new world. The challenge, of course, is trying to maintain stability in a proliferated world. The answer to this problem, in his view, is arms control: “there are good reasons to relearn the hands-on lessons from its real-world practice over three decades of the Cold War. This experience provides history’s only guidepost for navigating an uncontrolled arms race between major nuclear rivals” (77).

So how can arms control help? After all, as Cooper points out, “if everything is related to everything, and arms control attempts to grapple with everything at once... then it risks sinking under the unbearable weight of interlacing complexities” (69). But there is hope: “Arms control theory does not have a solution to this problem. Instead, it again reverts to keeping things simple by focusing on the strategic nuclear offense/defense balance... Keeping the focus on the prize of strategic stability; starting small and working toward incremental steps; working separately on lesser priorities” (69).

In the final chapter, the book offers specific recommendations on how the United States should conduct arms control, with a focus on strategic nuclear negotiations. One of its key insights is the political need to “race toward arms control whenever there is an active arms race” (108). And one of his most important lessons from the Cold War is the requirement for all domestic parties to commit to an arms control strategy. If they do not, and “If a bipartisan consensus cannot be not forged on fundamental and enduring US negotiating goals, then the United States is unlikely to achieve successful outcomes over a long-term negotiating horizon” (165).

The real focus of Cooper’s book is on strategic nuclear arms control. He makes many practical suggestions for future negotiators, for example that “the Cold War negotiating experience suggests the efficacy of pursuing two macro negotiating strategies for adversarial arms control: a deliberate dual-track approach and tailoring initial controls to what can be verified” (174).

The United States has to be hard-nosed, he argues. Both China and Russia may have interests that lead them to see plurilateral arms control as a better alternative to competing in an uncontrolled nuclear arms race. The issue may be to convince them that absent arms control the United States is prepared to arms race. He recommends asymmetric tradeoffs to capture the most destabilizing features of each of the three countries’ arsenals. Even if such an approach seems unlikely to work, it is worth trying, for as Cooper says, “History teaches that successful arms control requires playing a long and uncertain game” (190).

This reviewer liked the book, and found little to criticize. Cooper’s emphasis on strong willed, assertive arms control, however, is perhaps too aggressive for the diplomatic arena in which such negotiations are normally carried out. For one thing, unlike the early Cold War years when the United States was the dominant nuclear power, and the early post-Cold War era when it was a hyperpower leading a unipolar world, today it risks having its bluffs called by equally powerful and more determined or desperate adversaries. Perhaps more likely, the lessons of the Cold War, while a good starting point for resuming serious discussion on arms control, are possibly less valid in a world dominated by multiple nuclear deterrence dyads in which aggressive diplomacy might backfire, with unanticipated consequences for the United States.

Second, while Cooper does not openly state whether he believes that China is a current adversary, most of his recommendations assume that it is, or soon will be. This underscores the widely held belief within Washington circles that the United States must prepare for Beijing as a great power competitor. But is this a certainty, a necessary assumption? Or would it be, at least to some extent, the result of American policy choices? And if so, could not the United States pursue options that reduce the possibility of adding a third great power to the mix?

This is one of the best recent books on the subject of the interrelationship between deterrence strategy, nuclear weapons, and arms control. It provides a good historical review, some new strategic perspective of the world today, and a superb

explanation for the complications the world will face in the coming decades. This will require a reconsideration of adversarial arms control, and for the United States to become a tougher nation that can negotiate from a position of strength.

Nevertheless, as promised in the foreword, the author is not optimistic about the chances for success in controlling the future core trilateral strategic arms race and its transregional offshoots. As he puts it, “In sum, a dangerous and unprecedented multipolar nuclear arms race is more likely than not” (136). This implies that the United States must prepare to face its first competitive and uncontrolled nuclear arms race since the early 1970s. Cooper makes clear his belief that “As the seminal arms control theorists understood, geopolitical adversaries prefer unilateral advantage over cooperation. It takes a dangerous, costly, and unending arms race to motivate adversarial arms control and we are only in the nascent stages. But *now* is the time to start laying the groundwork for what could be a generational effort” (197). This is a pessimistic conclusion, one which, if it were to pan out, would imply an unfortunate future for America and humanity writ large. But it is most likely the correct perspective, given this book’s authoritative logic and clear argument that leads the reader to that final judgement.

REVIEW BY THOMAS G. MAHNKEN, JOHNS HOPKINS UNIVERSITY AND CENTER FOR STRATEGIC AND BUDGETARY ASSESSMENTS

David A. Cooper has accumulated an impressive career as both a practitioner (in the Department of Defense) and scholar (at the U.S. Naval War College), and I had the distinct pleasure of having him as a colleague in both phases of his career. In *Arms Control for the Third Nuclear Age*, Cooper observes that U.S. policy makers today face a new era of nuclear arms racing for which they are conceptually unprepared. He believes that the track record of arms control during the Cold War holds wisdom for the way ahead in what he terms the “Third Nuclear Age.” In particular, he argues that what is needed is a “reimagining of a neoclassical paradigm [of arms control] that applies key elements of this explicitly adversarial approach in an effort to manage today’s very different great-power rivalry” (1).

Arms Control for the Third Nuclear Age performs a valuable service to scholars and policy makers alike by excavating the record of U.S.-Soviet arms control during the Cold War and examining it under the light of current circumstances. It deserves a prominent place as part of the growing body of literature that seeks to understand the extent to which the U.S.-Soviet competition during the Cold War can be mined for lessons that are applicable to the present day.¹

In looking back at the Cold War, it is all too easy to fall prey to metaphors such as that of an “arms race.”² At times, the author too easily accepts the idea of an historical action-reaction arms race between the Soviet Union and the United States as well as a contemporary arms race between the United States, Russia, and China. Although the concept of an action-reaction arms race took root during the Cold War, it is not clear that it provides a compelling explanation of Soviet-American interaction at the time, let alone whether it is applicable to today’s more complex international environment. For example, Albert Wohlstetter’s research in the 1970s on defense spending and arms programs revealed only loose connections between actions by one side and those by the other. He discovered that spending by Washington was not correlated to actions by Moscow. Moreover, his research indicated that whereas the United States overestimated Soviet acquisition programs in some cases, in others it substantially underestimated them.³ Similarly, during the same period Ernest May, John Steinbruner, and Thomas Wolfe conducted a detailed analysis of U.S.-Soviet arms competition that discovered “budgets, forces, deployments, and policies of the United States . . . were products less of direct interaction with the Soviet Union than of the tension in the United States between dread of Communism on the one hand and the dread of deficit spending on the other.”⁴

¹ See, for example, Brendan Rittenhouse Green, *The Revolution that Failed: Nuclear Competition, Arms Control, and the Cold War* (Cambridge: Cambridge University Press, 2020); Thomas G. Mahnken, Joseph A. Maiolo and David Stevenson, eds., *Arms Races in International Politics from the Nineteenth to the Twenty-First Century* (Oxford: Oxford University Press, 2016); Mahnken, “Arms Races and Long-Term Competition” in Mahnken and Dan Blumenthal, editors, *Strategy in Asia: The Past, Present, and Future of Regional Security* (Palo Alto: Stanford University Press, 2014), 225-240.

² On the concept of an arms race, see Samuel P. Huntington, “Arms Races: Prerequisites and Results,” *Public Policy* 8 (1958); Colin S. Gray, “The Arms Race Phenomenon,” *World Politics* 24/1 (1971); George W. Rathjens, *The Future of the Strategic Arms Race: Options for the 1970s* (Washington, D.C., 1969); Robert Jervis, “Cooperation Under the Security Dilemma,” *World Politics* 30:2 (1978); and Barry Buzan and Eric Herring, *The Arms Dynamic in World Politics* (London: Lynne Rienner, 1998).

³ Albert Wohlstetter, “Is There a Strategic Arms Race?” *Foreign Policy* 15 (Summer 1974): 3–20; Wohlstetter, “Rivals, but no ‘Race,’” *Foreign Policy* 16 (Fall 1974): 48–81.

⁴ Ernest R. May, John D. Steinbruner, and Thomas W. Wolfe, *History of the Strategic Arms Competition, 1945–1972*, Part I (Washington, D.C.: Historical Office, Office of the Secretary of Defense, March 1981), 241.

Turning to the present day, it is not certain that what we face today should be characterized as a “burgeoning nuclear arms race” (117) or a more complex set of strategic interactions.⁵ Some Russian nuclear investments, for example in non-strategic nuclear weapons, appear to be aimed at countering American conventional superiority rather than Washington’s nuclear arsenal. Other investments, such as Russia’s “new” nuclear capabilities, appear to be a response to U.S. missile defense deployments.

How concerned we should be about the advent of new capabilities, such as hypersonic boost-glide vehicles, is similarly unclear, as is whether “the entire nuclear balance [is] up for grabs” (163) because of the emergence of new technologies. Indeed, as Cooper acknowledges, the United States, Russia, China, and other countries are developing different types of hypersonic weapons to perform a variety of missions (193). How many of the systems the United States and others will be able to afford is also unknown. These considerations should temper evaluations of the destabilizing impact of hypersonic weapons as well as the prospects of arms control to limit them.

More broadly, it is unclear whether the technologies that are likely to loom large in conflict in the twenty-first century are amenable to limitation or elimination in a verifiable way. For example, only a few of the Department of Defense’s top ten technologies are amenable to regulation via arms control. Areas such as artificial intelligence, quantum computing, and cyber are inherently dual use, widely spread, and thus not amenable to arms control.

The book is particularly useful in discussing arms control as an instrument of strategy. Whereas the Cold War track record provides lessons, it also counsels caution regarding the unintended consequences of arms control agreements. The United States and Soviet Union entered into the Intermediate-Range Nuclear Forces (INF) Treaty at a time when the state of military technology and verification means equated intermediate-range missiles with the delivery of nuclear weapons. However, the precision strike revolution has allowed militaries to deploy intermediate-range precision conventional weapons. As long as they adhered to the INF Treaty, the United States and Russia were unable to deploy such weapons while states that were not parties to the treaty, China first and foremost, exploited that fact to deploy a sizable arsenal of such weapons, one that gives them an asymmetric advantage against U.S. and allied power projection forces and the bases from which they operate.

Finally, although much can be learned from the history of U.S.-Soviet arms control, it is unclear whether bilateral arms control has a future. Whereas the nuclear balance throughout the Cold War was centered on the United States and the Soviet Union, today nuclear competition is multipolar. Whereas the total inventory of nuclear warheads has been decreasing for decades, the number of nuclear powers is increasing. Whereas the nuclear arsenals of the United States and Russia have been constrained by bilateral nuclear arms control agreements, those of other nuclear powers have not. Further complicating things is the asymmetry between Russia and China with respect to arms control. Whereas the Russian leadership wants to cling to existing arms control agreements, the Chinese government resists efforts to join arms control negotiations. And although strategic interaction between the United States and the Soviet Union during the Cold War fell far short of the “action-reaction” model developed by international relations theorists, current and future patterns of interaction among nuclear powers will likely be more complex. *Arms Control in the Third Nuclear Age* provides a particularly useful aid to navigating this new terrain, particularly through its discussion of the problems and prospects of trilateral arms control binding the United States, Russia, and China.

⁵ See, for example, Mahnken, Gillian Evans, Toshi Yoshihara, Eric Edelman, and Jack Bianchi, *Understanding Strategic Interaction in the Second Nuclear Age* (Washington, D.C.: Center for Strategic and Budgetary Assessments Study, 2019).

RESPONSE BY DAVID COOPER, CENTER FOR STRATEGIC AND BUDGETARY
ASSESSMENTS

Let me begin by thanking James Wirtz for organizing this roundtable, and Diane Labrosse and H-Diplo/ISSF for editing and publishing it. I am especially grateful to Wirtz not only for enlisting a distinguished group of scholars in the field of nuclear policy, Nancy Gallagher, Jeffrey A. Larsen, and Thomas G. Mahnken, but also for assembling a panel that reflects a spectrum of archetypal perspectives on these issues. My main goal in writing this book was to provoke a conceptually and historically informed debate on the role and control of nuclear weapons, and I could not have hoped for better than the debates reflected across these three reviews.

One of the central frames that I use for the book is a refresh of the Cold War paradigm (developed by Graham T. Allison, Joseph S. Nye, and Albert Carnesale) characterizing competing perspectives on how to deal with great-power nuclear rivalry as among hawks, doves, and owls.³⁰ In the face of hostile nuclear competitors, hawks see weakness as provocative, and thus seek to remedy this through unilateral military solutions that are intended to achieve a demonstrable strategic edge. In stark contrast, doves see the quest for military advantage as provocative, and thus seek to remedy this through unilateral restraint and seeking universal disarmament. Between these opposing poles are the owls, who see both strategic dominance and deep disarmament as unattainable solutions (however potentially desirable they may be in principle), and thus seek to mitigate the dangers of great power nuclear competition by promoting stable mutual deterrence. Whereas hawks reflexively oppose the disarmament initiatives that doves reflexively support, and doves return the favor by reflexively opposing any military competition that smacks of arms racing, owls look for pragmatic arms control steps that are designed to promote strategic stability. Owls, who once represented the dominant orthodoxy of American nuclear policy during the Cold War, became an endangered species during the post-Cold War era in which great power nuclear competition receded as a locus of international relations. The question at hand is whether the return of great-power nuclear competition augers for a revival of the owlsh paradigm.

As I note in the preface, I am a hawkish leaning owl. The central thesis of the book is that today's envenomed nuclear landscape requires the return of arms control in the service of deterrence stability to the fore of American nuclear thinking. The three reviews here provide instructive reactions to this thesis. Larsen, a leading arms control scholar, reveals an avowedly owlsh perspective in a positive review. Mahnken evinces the more hawkish take of a nuclear strategist who finds some value in the study but nonetheless takes exception to certain owlsh assumptions that he believes I accept too uncritically.³¹ Finally, Gallagher, a scholar of arms control and disarmament, brings a more dovish leaning perspective that finds much to criticize. This is an important debate that is effectively brought to light across these diverging reviews.

I will respond only briefly to Larsen's positive review in that he offers little criticism. He does gently worry that my language may come across as overly hawkish at times for what is after all a book that argues for a diplomatic undertaking (a criticism that Gallagher's review mirrors far less gently). This is a fair concern. Upon reflection, I can see that, like the early arms control theorists from the late 1950s and early 1960s to whom I am casting back for conceptual inspiration, I am at times overly zealous to distinguish 'arms control' as it was understood during the Cold War from 'disarmament' as it is widely understood today. Although these concepts used to be distinctive, even competing, the traditional distinction has become fuzzy in contemporary parlance. Therefore, in the book I try to highlight conceptual differences. In doing so, I use some deliberately provocative terms, such as "adversarial" (52) to describe competitiveness, "hard-nosed" (77) to describe pragmatism, and "arms racing toward arms control" (174) to describe the dryer term of art called dual-track negotiating. If

³⁰ Graham T. Allison, Albert Carnesale, and Joseph S. Nye, Jr, "Hawks, Doves and Owls: A New Perspective on Avoiding Nuclear War," *International Affairs* 61:4 (Autumn, 1985): 581-589.

³¹ I should mention that some months after receiving this review from Tom Mahnken, I retired from my tenured position on the faculty of the U.S. Naval War College and joined his think tank, the Center for Strategic and Budgetary Assessments (CSBA), as a non-resident senior fellow.

these provocative terms come across as too strident, then I can only hope that readers will perceive balance and evenhandedness in my underlying analysis and recommendations.

Mahnken lauds my attempt to mine the Cold War experience for lessons to apply to today's evolving nuclear challenges, and he welcomes my treatment of arms control as an instrument of broader strategy. However, he also raises broad concerns that reflect skepticism about the basal assumptions of owlsh arms control theory. First and foremost, he questions the idea of action-reaction arms races, citing a number of studies suggesting that, at best, action-reaction explanations paint an overly simplistic picture. This thoughtful critique is consistent with the criticisms of many hawkish strategists, who lament that the idea of action-reaction arms racing is too often used by dovish disarmament advocates to argue against arming, even in reaction to the arming of others, for fear of provoking a further counterreaction.³² Mahnken is correct that I do believe in action-reaction arms racing dynamics, and therefore see value in using the negotiation of arms control measures to tame them. However, absent arms control, that does not imply that unilateral restraint is necessarily the best alternative. But to Mahnken's main point, I regret that this important critique of arms racing theory does get short shrift and for no good reason. Having run over my word limit, a detailed discussion of arms racing theory was reduced to a brief acknowledgement that action-reaction arms racing is a contested concept. Mahnken is right that this deserves more attention, rather than taking the reality and dangers of action-reaction dynamics as a given as I do. Put differently, I should have interrogated this disagreement more fulsomely.

Mahnken offers a few other more specific critiques. He believes that my assessment of the destabilizing potential of emerging technologies such as maneuverable hypersonic missiles is overly alarmist, or at least premature. This view is consistent with his doubts about the risks and reality of arms racing in general. I sincerely hope that he is right about this, but I remain pessimistic. He also notes that many of the most potentially revolutionary emerging military technologies are both beyond the nuclear realm and not amendable to negotiated controls, for example artificial intelligence, quantum computing, and cyber. He is certainly correct on these counts. Nonetheless, the fact that there are militarily important emerging technologies unrelated to nuclear forces and for which arms control is unlikely to be useful should not prevent the pursuit of arms control for those where it may be. This would seem especially the case for emerging technologies related to nuclear forces, which for now at least remain the only likely cause of planetary civilizational extinction. Finally, Mahnken suggests that I may be overstating how useful arms control was during the Cold War. I confess that this surprises me, since I take pains to stress the modest goals and achievements of the Cold War arms control project.

From almost exactly the opposite logic, Nancy Gallagher offers a more dovish critique that is the most critical of these three reviews. In one sense this is odd in that, unlike Mahnken, Gallagher explicitly endorses my policy proposals. She squares this circle by arguing that I commit some transgressions along the way to reaching what she ultimately concedes are sensible recommendations. Specially, she argues that I conflate two opposing deterrence goals, suggesting that I am confused about whether I support the assured destruction approach associated with Thomas Schelling (to which I also refer as stable mutual deterrence), or the competing damage limitation approach associated with Herman Kahn (to which I also refer as strategic superiority or nuclear warfighting).³³ I would, however, push back on the notion that I have conflated these competing deterrence goals in any befuddled sense. Rather, I argue that this is a false dichotomy in terms of the Cold War experience. Indeed, I spend an entire section discussing how arms control theory and practice needed to adapt in the 1960s and 1970s to accommodate both of these seemingly incompatible loadstars of American deterrence thinking. I argue that it was the arms control paradigm itself that allowed the United States to pursue a hybrid approach to deterrence, setting stable mutual deterrence as the goal for strategic forces à la Schelling, but with Khan's approach to escalation dominance prevailing at lower levels of warfighting. This assessment does not represent the conceptual inconsistency that Gallagher's review implies.

³² See for example Keith B. Payne, "Action-Reaction Metaphysics and Negligence," *The Washington Quarterly* 24:4 (Autumn 2001): 109-121.

³³ Herman Kahn, *Thinking About the Unthinkable* (New York: Horizon Press, 1962); Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Frederick A. Praeger, 1965); Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966).

I argue that this hybrid deterrence model facilitated an uneasy but enduring bipartisan deterrence consensus during the Cold War that would be useful to replicate today. By contrast, Gallagher's review suggests that she supports a mutual destruction approach that favors minimal deterrence.

Gallagher takes particular exception to my favorable historical findings about the utility of the "dual track" approach that the Carter and Reagan administrations used in the last phase of the Cold War. (I am perhaps somewhat at fault for provocatively describing this as "arms racing to arms control"). This amounts to her review's most vigorous critique of my analysis of the Cold War experience. Although Gallagher admits that NATO's 1979 dual track decision (to deploy intermediate range nuclear missiles in Europe to counter Soviet deployments while seeking their mutual elimination) is widely understood to have incentivized the Soviets to get serious about negotiating the Intermediate Nuclear Forces (INF) Treaty—and that this dual track incentive is frequently extrapolated to the wider Carter and Reagan era buildup in strategic forces and missile defenses and the subsequent Strategic Arms Reductions Treaty (START)—she casts wholesale doubt on this "common wisdom" (as she terms it).

Pointing to a piece by congressional researcher Amy Woolf, along with other Soviet archival research, she posits that the evidence that it was the dual track approach that led to changes in the Soviet negotiating stance is circumstantial and overstates the role of this factor versus various other complex variables. These are fair points, and they are points that I acknowledge in the book (citing the same Woolf piece). By the same token, while common wisdom is not always correct, in this case the circumstantial evidence would seem compelling that the dual-track policy played some not insignificant role in influencing the Soviets. It would be a striking coincidence that the shift in Soviet negotiating posture so closely coincided with the completion of NATO's INF deployment after the failure of strenuous Soviet efforts to prevent this. Every participant in the process that I interviewed explicitly credited the subsequent INF negotiating breakthrough to these deployments, often in the strongest possible terms. None of this is dispositive to the question of causality, but it suggests that it is reasonable to infer from the Cold War experience that there is potential merit to the approach. I stand by this assessment.

Gallagher's review misconstrues my conception of what a revival of the dual-track approach would entail. She states, "This suggests that the United States must do everything in its power to regain quantitative and qualitative superiority in every strategic emerging technology and deployed weapons system." This is not the case I make in the book. Gallagher's argument conflates the Kahn-esque approach of strategic superiority with my actual analysis, thus calling into question my fidelity to the central arms control goal of promoting stable mutual deterrence. This is inaccurate. My argument is *not* that the United States needs to pursue strategic superiority as Gallagher suggests—indeed, I repeatedly and explicitly argue that this goal is unlikely to be achievable in an uncontrolled tripolar arms race with China and Russia. Instead, my argument is that the United States must not allow itself to fall too far behind in any area, lest unfavorable imbalances disincentivize Beijing and Moscow from undertaking serious negotiations. For example, in my assessment the current Chinese advantage in intermediate range nuclear-capable missiles, or the Russian advantage in strategic and tactical nuclear forces, make it unlikely that either would have much incentive to negotiate toward parity in these systems. (The same can be said for American reluctance to negotiate limits on strategic missile defense in which it believes it enjoys an advantage.)

However, my prescription here is not for the United States to seek superiority, but instead to demonstrate to Russia and China that the United States will not passively allow them to sustain any outsized superiority, all while offering plausible arms control alternatives to a dangerous and costly uncontrolled competition. This is completely consistent with the thinking of Schelling, Hedley Bull, and other seminal theorists of classical arms control, as well as with the evolution of arms control practice in the Cold War.³⁴ This certainly amounts to adopting "arms racing to arms control" as a deliberate tactic.

³⁴ See for example Hedley Bull, *The Control of the Arms Race: Disarmament and Arms Control in the Missile Age* (New York: Frederick A. Praeger, 1961); Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control* (New York: The Twentieth Century Fund, 1961); Henry A. Kissinger, *The Necessity for Choice: Prospects of American Foreign Policy* (New York: Harper & Brothers, 1961); Robert R. Bowie, "The Basic Requirements of Arms Control" *Daedalus* 89:4 (Fall 1960): 234-241.

However, the goal is not for the United States seek to pull ahead, but rather to keep pace with its strategic competitors who have themselves pulled ahead, and always with an eye on the prize of negotiating a workable and stable alternative.

While I sincerely welcome Gallagher's critiques of my thesis or analysis, I should point out that the review contains some mischaracterizations of my actual argumentation that paint me, inaccurately in my view, as hawkish beyond the arms control pale. In some cases, this is by associating me with specific citations without providing their context. For example, Gallagher notes that I favorably cite the late academic strategist Colin Gray, a fierce arms control critic. However, I do so in the very different context of lauding his pioneering theorizing on the emergence of a 'second nuclear age' in the 1990s, or else presenting his critiques of arms control as part of a balanced consideration of the scholarly and strategic debate about its utility. There is no contradiction in citing a brilliant and eminent scholar with whom one disagrees about certain things. Along the same lines, Gallagher writes that I cite what she terms the "alarmist" views of one hawkish former G.W. Bush administration official, Robert Joseph, about Chinese nuclear intentions. She does not mention that I do this in discussing the range of expert views, in which I cite Joseph explicitly as representing the most pessimistic camp that believes that Beijing is aiming for strategic dominance. Interviews for this book encompass former officials across time, partisan affiliation, and ideological bent. I firmly believe that drawing on a diverse spectrum of expert experience and perspectives makes for balanced analysis and that this is a strength rather than a weakness. The hawkish perspective that Joseph represents should be included in a balanced scholarly analysis of this open and ongoing debate.

It is nonetheless true that Gallagher's assessment of Chinese and Russian strategic intentions is far more sanguine than my own. She states, "Contrary to the alarmist claims included in this book, there is no hard evidence that either Russia or China seek to match or surpass US strategic capabilities." This is a peculiar assertion on its face, at least concerning Russia, which already surpasses American strategic capabilities. Whether Moscow can sustain this strategic edge is another matter, but President Vladimir Putin has left little doubt that he plans to try. Chinese capabilities and intentions are far less apparent, and expert opinion ranges from the sort of benign defensive motives that Gallagher infers, to increasingly widespread worries that China wants to achieve strategic parity (which seems to be the emerging view of senior American military leaders), to a worst-case scenario in which China is carefully laying the groundwork for a sprint to strategic superiority (the case made by Robert Joseph among others, as already noted). In the book I do not take a firm view, but I tend to worry that the reality is somewhere along the alarmist spectrum. I very much hope that Gallagher's assessment is the correct one. Unfortunately, recent developments suggest that strategic parity, or even superiority, remain all too plausible as Chinese goals.

Finally, Gallagher argues that my book paints an overly bleak picture of Chinese unwillingness to negotiate verifiable limits on its nuclear forces. She points in particular to Beijing's record in the mid-1990s of negotiating seriously on the Comprehensive Test Ban Treaty (CTBT). Here again, I hope that she is right. Only time will tell, but I would argue that the CTBT experience is an extremely thin reed to hang our hopes on. First, when it was being negotiated the CTBT was seen in large measure as a global nonproliferation treaty within the United Nations framework, which is a very different kettle of fish from direct negotiations on reciprocal limits with the other nuclear powers. Second, although China did make important concessions as Gallagher argues, none of these prevented the modernization and expansion of its nuclear forces, as evidenced by Beijing having done just that over the last two decades despite abiding by a testing moratorium. Third, China was a far less powerful and more deferential actor in the international system of the mid-1990s than is now the case. Today, Chinese leaders are adamant in rejecting any negotiations to limit their nuclear forces. They also forcefully reject suggestions for greater transparency about their nuclear posture. I do not think that taking them at their word is unreasonable.

As Gallagher says, in the final analysis, she supports the specific set of proposals that I draw from my historical and contemporary analysis. Rather than a profound difference of views, I see this more as a case of a dovish owl and a hawkish owl grappling with the proper scope of the owl paradigm. Since my main argument is for an owlish revival, that strikes me as a healthy debate.

In closing, I would be remiss if I did not offer a brief memorial for Robert Jervis, who oversaw these roundtable reviews for so many years. It was in a class that I took from Professor Jervis on deterrence theory in the late 1980s that the seeds were planted for my lifelong interest in nuclear strategy and policy. Although I was a lowly master's student in a terminal professional degree program, Jervis brought everything he had to our class, challenging us to grapple with the sundry

dilemmas and contradictions of the nuclear revolution as if we were the theorizing Ph.D. students that he inspired me eventually to become. I will be forever grateful to him for planting these intellectual seeds and I join the entire profession in mourning his loss.