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ANTICIPATORY ARMS CONTROL

by Adam Mount

Introduction

During the second term of the Obama administration, U.S.-Russia relations have deteriorated to levels not seen since the Cold War. In February 2016, Russian Prime Minister Dmitry Medvedev told the Munich Security Conference that relations had "slid back to a new Cold War." [1] Elder statesmen see the resemblance too: Russia's former Foreign Minister Igor Ivanov warns that the risk of nuclear war is "higher than in the 1980s" and "growing," [2] while former U.S. Secretary of Defense Bill Perry has warned that "the probability of a nuclear calamity is higher today" than it was during the Cold War, saying that "we are starting a new nuclear arms race." [3] The history of the Cold War is written in the pages of the bilateral nuclear arms control treaties that represented a primary means of communication between the two powers and helped them to establish a tenuous but critical measure of strategic stability.

Two related trends could lead to a new arms race: as both the United States and Russia are accelerating modernization of their strategic forces, their progress on arms control has slowed to a halt. In both countries, planned expenditures for nuclear modernization are under pressure, encouraging defense officials of both countries to amplify threats they face to justify the programs, and introducing new systems that could upset strategic stability between the countries.

The second trend is a marked turn away from arms control as a way of managing these problems. In Washington and in Moscow, officials hesitant to show conciliation to the other side are moving away from arms control rather than toward it. The U.S. State Department claims that Russia is in violation of the Intermediate-range Nuclear Forces (INF) Treaty; bilateral cooperation on nuclear security measures have almost completely stopped;[4] and there are increasing calls to abandon existing arms control arrangements, including the 2010 New Strategic Arms Reductions Treaty (New START). U.S. invitations to undertake a new round of cuts have been rebuffed by Moscow. The situation has led Russian scholar Alexei Arbatov to worry that we have reached "the end of history for nuclear arms control." He warns that "the current period of disintegration is unprecedented, with literally every channel of negotiation deadlocked and the entire system of existing arms control agreements under threat." [5]

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Navigating this period of tension requires a renewed dedication to the idea of strategic arms control and new concepts that can deal with new challenges. One reason why there is little interest in negotiating a follow-on agreement to New START is that the treaty's modest scope did little to solve the very real security problems that both countries face. To break the deadlock, the United States and Russia should seek a treaty that does not only limit existing strategic forces but also the weapons systems that both countries plan to develop and deploy in the next decade. In this way, each side could hope to control the most threatening systems that they face, avoid unnecessary expenditures, and present a more compelling case to their domestic audiences about the value of arms control. Most importantly, for a decade in which the world's two largest nuclear arsenals are undergoing substantial modernization, such approach could not only contribute to stabilizing the extant bilateral relationship but also to striking an agreement which could promote stability well into the 21st century.

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The Purpose of Nuclear Arms Control

Like any other international agreement, arms control agreements are easier to accomplish when relations between the sides are constructive. Yet this does not mean that arms control is "the reward the great powers give each other for friendly political behavior," as Mark Trachtenberg has written.[6] Arms control is not a reward for a safer world; it is a means of buil-

ding one. As Thomas Schelling and Morton Halperin wrote in their classic treatment, arms control is an efficient and perhaps necessary means of achieving those steps that were already "a continuing urgent objective of national military strategy."[7] States should not expect arms control agreements to "eliminate the political, economic, and ideological differences that genuinely underlie present international antagonisms." Yet we can devise agreements that can help to limit the destabilizing features of nuclear weapons and related postures (like compressed reaction times, the pursuit of first-strike capabilities, and uncertainty about the size and posture of an adversary's forces). In other words, arms control is an important mechanism for stabilizing a strategic relationship and so becomes more important as relations deteriorate.

Arms control continues to serve valuable purposes today. In practice, negotiated agreements are the only means that a country has of influencing the size, structure, and posture of another arsenal short of war. When coupled with strong verification provisions, arms control also serves to achieve a measure of mutual transparency, allowing signatories to a verifiable treaty to exchange information about their nuclear forces. Since New START entered into force in 2011, the United States and Russia have exchanged more than 10,000 notifications and are approaching 100 inspections each,[8] which afford each country confidence over the others' declarations and warning of new deployments. This transparency limits the possible political and military gains if one side were to cheat on the agreement and therefore deters cheating.

Nuclear arms control agreements also help to ensure nuclear parity between the United States and Russia. Since the late 1950s, the strategic relationship between the two countries has been marked by rough parity, an approximate balance of strategic capabilities.[9] Arms control agreements not only endorse a condition of parity that exists between two countries, certifying to each other that they can meet their strategic requirements if the terms of the treaty are met; they also help to create parity in three ways.

First, agreements can moderate destabilizing imbalances or advantages.

Second, an agreement can create parity by establishing how to weigh or count dissimilar systems. Because the United States and Russia

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U.S. President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev signing the INF Treaty in the East Room at the White House in 1987. Courtesy of Ronald Reagan Presidential Library.

maintain different types and quantities of nuclear arms, it is impossible to simply compare the arsenals by matching equivalent warheads. Does the Russian advantage in throw-weight offset the U.S. advantage in stealth? Which systems are destabilizing? It would be impossible to settle these questions without engaging in bilateral arms control negotiations. The resulting agreements create parity by setting the price of an apple in oranges and making sure both countries come out whole.

Third, an agreement can create parity as a political or social fact. Once an agreement has been signed and ratified, it sets a standard for an acceptable level of risk. An arms control agreement is a prominent acknowledgement that the strategic condition is tolerable, allowing each country to feel a measure of comfort. The practical effect is to moderate hysterical calls for new nuclear capabilities and the unproductive impulse to demonize the other side, thus helping to stabilize the relationship.

A long-range ground-based interceptor is launched from Vandenberg Air Force Base, Calif. Courtesy of U.S. Department of Defense.

The Current Situation

At least since the annexation of Crimea in March 2014, U.S.-Russian relations have grown unstable and increasingly antagonistic. In Ukraine, Syria, and the Baltics, U.S. and Russian interests have come into conflict. In the airspace and seas around NATO countries, and in the skies over Syria, Russian forces have operated in provocative and sometimes dangerous ways.[10] For its part, the United States has included nuclear-capable bombers in joint exercises that simulate operations against Russia.[11] To demonstrate resolve and alliance cohesion, the United States and NATO have stood up new forward-deployed and rapid reaction units in Europe including an Armored Brigade Combat Team (ABCT) on rotational deployment.[12]

These tensions have been exacerbated by the nuclear modernization programs of both countries. Weapons systems that were purchased during the arms buildup of the 1980s are reaching the end of their services lives and must be replaced or retired. Russia is about midway through its modernization cycle, in which Soviet-era ICBMs like the SS-18 and SS-19 will be replaced with variants of the new SS-27, and eight new Borei-class ballistic missile submarines (SSBNs) will take over the deterrence mission at sea.[13] Beset by falling energy prices, ongoing conventional modernization programs, U.S. and EU sanctions, and fleeing capital, Russia is having difficulty sustaining its ambitious nuclear programs.[14] In one prominent example, plans to develop a new stealth bomber have been deferred in favor of restarting production of the previous generation Tu-160 Blackjack.[15]

At the same time, the United States is just beginning its modernization cycle. Over the next thirty years, the U.S. government intends to spend $1 trillion on its nuclear deterrent to replace nearly every aircraft, bomb, missile, submarine, and warhead in its arsenal. In Washington, as in Moscow, analysts and former officials are raising concerns about the country's ability to afford that level of expenditure given other priorities in conventional military spending, a large national debt, and aging domestic infrastructure.[16] Others have

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An Evolved Sea Sparrow Missile (ESSM) launches from the aircraft carrier USS Dwight D. Eisenhower (CVN 69) during a live-fire missile exercise in the Atlantic Ocean April 21, 2016. Courtesy of U.S. Department of Defense.

expressed concern that the modernization plans include unnecessary new capabilities or could be destabilizing.[17] So far, the Obama administration has made only minor adjustments to the plans, including a two-year delay on the ballistic missile submarine class that will replace the Ohio-class submarines beginning in 2030,[18] but some expect that fiscal pressures will force further modifications.[19]

The modernization programs have raised tensions in both countries. Republican Senator James Inhofe warned that it is "time to stop Putin's nuclear arms buildup."[20] His party colleague and Chairman of the House Armed Services Subcommittee on Strategic Forces, Mike Rogers, said at a December 2015 hearing that he is "greatly worried that the United States stands the risk of losing the next arms race to Russia and China."[21] Recently, the U.S. Department of Defense has slipped from seeing modernization as a necessary means of sustaining existing capabilities to also justifying it as a way of "countering Russia's aggressive policies."[22]

U.S. modernization has provoked threats from Moscow. Russia called recent flight tests of the new B61-12 tactical nuclear gravity bomb "irresponsible" and "openly provocative,"[23] and warned that if the United States deploys the new version to Germany as expected, it would "require Russia to take counter-steps and countermeasures to restore balance and parity,"[24] including deployment of Iskander nuclear-tipped missiles in Kaliningrad.[25] Moscow's acquisition of missiles with new capabilities is causing some in Washington to argue that its new generation of systems must also have new capabilities, like road-mobile ICBMs.[26]

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This alarm over the other country's nuclear development and urge to answer it generated the arms race that was part and parcel of the Cold War. Yet, after the shock of the Cuban Missile Crisis in the early 1960s, the superpowers engaged in repeated and costly rounds of arms control negotiations that helped to lower tensions and address strategic imbalances. In

the late 1990s, several fissures opened in the arms control regime. The U.S. dedication to missile defense and the eastward expansion of NATO lead to the collapse of the Anti-Ballistic Missile (ABM) Treaty and, by extension, the START II and START III treaties. Washington's failure to ratify the Comprehensive Nuclear-Test-Ban Treaty was another major blow. Instead, the parties signed two relatively modest treaties, the 2003 Strategic Offensive Reductions Treaty (SORT) and the 2010 New START agreement.

Today, New START remains in force. Signed in April 2010, the treaty entered into force in February 2011 and limits deployed strategic warheads to 1,550 and the total number of operational launchers to 800, of which only 700 can be deployed at any time. It places no limits on tactical systems (with ranges below 500km), conventional strike capabilities, missile defenses, or non-nuclear systems that affect strategic stability.[27] Under the terms of the treaty, the parties must reach these limits by 2018. The treaty will remain in force until 2021 at which time the parties can choose to extend its provisions for another five years. Though both countries continue to adhere to New START,[28] opinion in Washington has turned against arms control. Russia's alleged violation of the 1987 INF Treaty has strengthened the hand of those who were already skeptical of arms control and many believe that a new arms control agreement will prove impossible until Russia takes steps to address U.S. concerns and returns to compliance with the treaty. In these circles, suspicions persist that Russia has gotten the better of a 'naïve' President Obama.[29]

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Senator Inhofe argues that "Russia used the [New START] process to reduce the threat posed by U.S. strategic nuclear forces, while simultaneously pursuing alternative nuclear capabilities—such as cruise missiles—in support of its military strategy and national security."[30] A recent *Washington Times* op-ed by former senior Pentagon officials Keith B. Payne and Mark B. Schneider warned that remaining in New START would "be viewed by Mr. Putin only as a sign of weakness and encourage him to even greater provocations."[31] All this talk has boiled over into attempts at action, with Republican Congressmen, for example, attempting to insert provisions into the annual National Defense Authorization Act bills that would suspend U.S. compliance with New START

Puget Sound, Wash. (Feb. 15, 2016) The Gold Crew of the Ohio-class ballistic-missile submarine USS Henry M. Jackson (SSBN 730) transits the Hood Canal as the boat returns home to Naval Base Kitsap-Bangor following a routine strategic deterrent patrol. Courtesy of U.S. Department of Defense.

and deploy new missile defense systems as a sort of punishment for Russia's actions.[32]

Today, there is more interest in reneging on existing arms control obligations than in negotiating new ones. There have always been some in the United States who insist that Moscow is getting the better of Washington, but it is not clear when the purpose of arms control shifted in the national imagination from a step to help stabilize poor relations to a reward for good behavior. In short, right when we need it the most, arms control is becoming unfashionable.

Even if political and ideological resistance to arms control were to disappear tomorrow, it would make little difference if there were no deal to be done. Unfortunately, there seems to be no obvious arrangement that meets the national security interests of both the United States and Russia beyond New START. Although both countries have very real strategic concerns that could be rectified through arms control, there is little overlap in their preference sets. New START's limits on deployed strategic warheads do promote stability, but at the same time fail to address the most acute threats that both countries perceive.

In 2013, President Obama suggested a further one-third cut to the deployed strategic arsenal to build on the experience of New START (a proposal that Russia has effectively rejected). Washington's real interests lie in limiting certain components of Russia's arsenal, especially its extensive inventory of tactical nuclear systems. Though little is known about these forces, recent studies estimate the figure to be near 4,000 total warheads, with half that number actively assigned to specific delivery vehicles, including short-range missiles, torpedoes, naval mines, air-defense interceptors, and bombs.[33]

Russia has been explicit about its arms control priorities for years. Moscow has repeatedly pressed the United States to accept limits on new classes of weaponry, including the development of advanced conventional forces, missile defense systems in Europe, and its contribution to NATO's tactical nuclear forces. It is this concern that has led the Kremlin to develop the Sarmat and, reportedly, hypersonic re-entry vehicles capable of maneuvering as they glide to target. Additionally, though it rarely discusses the topic, Russia may have an interest in limiting the U.S. hedge of non-deployed warheads that could be uploaded to existing launchers in a crisis, quickly increasing the size of the U.S. arsenal far beyond Russia's. Lastly, Russia has demanded that the next round of arms control talks include China.[34]

There is little common ground in these positions. Americans understandably wonder whether the Russian preoccupation with U.S. missile defense and tactical weapons are ploys to fracture the NATO bloc and suspect that the call to include China is meant to delay negotiations indefinitely. Citing alliance cohesion and the need to deter Russia, the United States has refused to accept new limits on its forces in Europe or on other conventional systems that have strategic consequences, including European missile defense. Russians are reticent to limit nuclear arms (where they are relatively strong) without limits to other weapons (where they are relatively weaker). With these chips on the table, there is no obvious 'grand bargain' that works to the advantage of both countries. Neither is willing to modify or limit its operations in ways that would elicit a desirable concession from the other side. Most observers expect that the parties will agree to a five-year renewal of the modest New START limits in 2021.

In the midst of new tensions from increased geopolitical and military competition, concerns over modernization have added another impediment to arms control. At the same time, the failure of arms control allows modernization plans to progress unchecked. Where arms control during the Cold War was a mechanism to stabilize rapidly-evolving competition in strategic weapons, today arms control has been set aside just when it is needed most.

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Another Kind of Arms Control

In search of a stabilizing and mutually-advantageous arms control agreement, the United States and Russia should consider an agreement that limits not only their existing arsenals but also the modernization programs of both countries. Including plans for future weapons systems would ensure that the agreement enforces strategic stability not only in the near term but also far into the 21st century.

At the same time, a model of anticipatory strategic nuclear arms control may also increase the likelihood that the parties can reach agreement, in three ways. First, future weapons systems represent additional bargaining chips that might help negotiators find a balanced agreement that both can accept. Second, both countries have an additional incentive to do a deal that limits modernization plans that neither can afford to complete anyway. If there will be cutbacks to nuclear modernization plans for fiscal reasons, each side has an incentive to try to shape the other sides' cuts and gain something in return for their own. Third, the countries would gain a chance to limit those weapons that they find most threatening. The existing stocks of nuclear weapons are a concern, but have already been internalized by the defense establishments on both sides; it is new systems that have a greater potential to be dangerous and destabilizing.

Though there has never been an agreement quite like this, there is precedent in the history of arms control of establishing limits on future capabilities. For example, the INF Treaty not only removed existing intermediate-range missiles (including the Soviet SS-20, and the U.S. Pershing II and BGM-109G ground-launched cruise missile); it also prevented each party from deploying other systems. The most prominent of these was the RK-55 Granat (NATO: SSC-X-4 Slingshot) land-based nuclear cruise missile, which had undergone testing and was about to be deployed. By December 1988, the Soviet Union destroyed 72 non-deployed RK-55 missiles.[35] The United States also agreed to abandon a new variant of the Pershing II, the 1b, which was a single-stage missile of reduced range. The 1972 Anti-Ballistic Missile Treaty was arguably also negotiated to prevent the widespread deployment of systems capable of defending against strategic ballistic missiles. The program seriously curtailed research on the U.S. Army's Safeguard Program, limited the deployment of the Soviet A-135 system as well as planned research into future Soviet missile defense systems.[36]

An F-15C Eagle aircraft with the 44th Fighter Squadron approaches a KC-135 Stratotanker from the 909th Air Refueling Squadron to begin an inflight refueling procedure March 21, 2016, off the coast of Japan. Copyright: U.S. Air Force photo/Senior Airman Peter Reft. Link: https://www.flickr.com/photos/usairforce/25999113016/ No changes made.

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It is impossible to predict the terms of a treaty before negotiations begin, but we can specify systems that both sides may have an interest in limiting. The United States would want to limit upcoming systems that it considers threatening or destabilizing, including the RS-28 Sarmat heavy inter-continental ballistic missile, which could carry between ten and 15 independently-targetable warheads, and is expected to be flight-tested by 2017.[37] Former Secretary of Defense Bill Perry and former Assistant Secretary of Defense Andrew Weber have proposed a treaty eliminating nuclear-armed cruise missiles,[38] which may be a way of ensuring that Russia forgoes deployment of the new cruise missile system that stands in violation of the INF Treaty. These anticipatory

arms control steps could supplement efforts to scale down Russia's vast inventory of tactical nuclear warheads.

Russia may be interested in limiting U.S. modernization of the B61 nuclear gravity bombs deployed in Europe, which would compel NATO to withdraw these forces in the next ten years. The Kremlin might furthermore seek limits on U.S. missile defense deployments or research, to prevent a possible unchecked build-up of the European Phased Adaptive Approach (EPAA) or continued development of U.S. National Missile Defense (NMD). Lastly, Russia may find the United States willing to discuss cancellation of the planned Long-Range Standoff (LRSO) nuclear-armed cruise missile which is set to replace the existing air-launched cruise missile (ALCM) around 2025, especially in the context of other steps to limit tactical nuclear systems.

Both countries may have an interest in limiting the planned quantities of nuclear delivery vehicles. For example, the United States intends to field twelve Ohio replacement submarines while Russia will rely on only eight Borei-class submarines; Russian negotiators may decide to try to equalize this figure. Furthermore, cognizant that developments in space, cyber, and conventional precision-strike capabilities can today impact strategic stability, the parties may attempt to expand the scope of arms control negotiations beyond the nuclear domain. For example, both countries may have an interest in limiting or prohibiting deployment of hypersonic glide vehicles capable of striking nuclear forces. Russia is conducting flight tests of its Yu-71 hypersonic vehicle as part of Project 4202[39] while the United States is testing the Advanced Hypersonic Weapon (AHW) as well as the Hypersonic Technology Vehicle 2 (HTV-2).[40] These weapons could potentially represent new challenges to crisis stability by offering prompt and reliable conventional means of striking valuable targets.

It is not clear which of these steps the countries would choose to prioritize or what price they would set for them. It could be that expanding the scope of arms control to other domains of strategic interaction or to upcoming programs will prove too ambitious. However, it is also possible that inclusion of new threatening systems could allow negotiators the latitude they need to conclude a more ambitious deal.

There are a number of potential difficulties with anticipatory arms control. It may be that the added inducement of a more advantageous

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Lt. Col. George Watkins, the 34th Fighter Squadron commander, drops a GBU-12 laser-guided bomb from an F-35A Lightning II at the Utah Test and Training Range Feb. 25, 2016. Copyright: U.S. Air Force photo/Jim Haseltine. Link: https://www.flickr.com/photos/usairforce/25580005960/ No changes made.

RT-2PM2 Topol-M TEL with presumably Yars system transport-launch container during the first rehearsal for the Victory Day Parade at the training ground in Alabino. Copyright: Vitaly Kuzmin. Link: https://en.wikipedia.org/wiki/RT-2PM2_Topol-M#/media/File:19-03-2012-Parade-rehearsal_-_Topol-M.jpg No changes made.

treaty is insufficient to overcome resistance to meeting the countries' preconditions to arms control negotiations—including Russian compliance with the INF Treaty and U.S. refusal to discuss non-nuclear systems or to effectively constrain missile defense development. Furthermore, the added complexity of any agreement will require more extensive and more difficult negotiation, which will be difficult in any context, but doubly so now.

There are also more structural difficulties with the concept. Both sides may have an incentive to preserve certain antiquated weapons systems as bargaining chips for these negotiations or to inflate the scale of their modernization programs in the hopes of charging a higher price for their cancellation. However, it must be said that this incentive pertains to all arms control agreements and is probably ineliminable.

Lastly, it is not only the case that the U.S. and Russian nuclear arsenals are asymmetrical—so are the modernization schedules of the two countries. As a result, it may be difficult to find a bargain that trades systems like for like. As a result, negotiators should embrace this asymmetry and cobble together an agreement that trades off dissimilar systems. In this way, a future agreement could include limits to both existing and planned systems, as well as restrictions on when and where certain systems are deployed. In this way, each country would have a better chance of limiting the opposing systems that it finds most threatening. The resulting treaty may end up with significantly different obligations for each side, but this flexibility could also help negotiators to reach a deal that better serves each country's national interests.

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Verification of an anticipatory arms control treaty would also be a challenge, but in the past both parties have accepted intrusive inspection requirements to secure an arms control treaty that they considered to be in their interest. If negotiators agreed to provisions that limited the quantity of systems under development, the countries could grant periodic and managed access to production facilities or even establish a continuous presence to monitor these facilities and inspect their products (as they did under the INF Treaty). If an anticipatory arms control treaty agrees to limit specific types of platforms or munitions, the best measure may be to provide access for inspectors or emplace instruments at testing

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ranges. In general, a more ambitious arms control treaty will require more intrusive verification mechanisms. In this political climate, it may be difficult for many politicians to countenance verifications; but it may also be possible if these politicians can tell a credible story about how the treaty limits weapons that would threaten national security.

Lastly, anticipatory arms control lends itself to one final intriguing possibility. If Russia's request to include China in the next round of arms control negotiations is not simply a tactic to delay talks, it does have substantial merit as a way of promoting stability between all three parties. Because China's arsenal is so much smaller than that of both the United States and Russia, there is little reason for it to participate in a treaty that limits deployed strategic warheads until both of these countries reduce their arsenals substantially. However, the prospect of an asymmetric and anticipatory arms control treaty might permit a treaty that works to the advantage of all three parties.[41] It may be possible to encourage China to accept very modest limits on certain of its modernization plans in exchange for limits from the other two parties. For example, Russia and China might have an interest in restricting deployment of intermediate-range nuclear forces, in limiting research into hypersonic glide vehicles, in limiting multiple independently targetable reentry vehicles (MIRVs) on certain classes of missiles, or in joining the United States in banning nuclear-armed cruise missiles. Including China as a kind of 'junior partner' in the negotiations could provide modest benefits in terms of stability but could also help to convey the benefits of transparency and the norms of arms control to a rising power. In so doing, it could open the way to further bilateral or trilateral arms control projects in the future.

Contrary to conventional wisdom, a more ambitious treaty may be easier to conclude than a more modest one. A modest treaty like New START can be criticized by hardliners who doubt the benefit of moderate and reciprocal reductions in strategic weapons; some will wonder whether the treaty is an ideological step on the road to disarmament. On the other hand, an anticipatory arms control treaty may help to overcome political resistance in both countries by resolving pressing security problems. It is difficult to dismiss a treaty that proposes verifiable limits on potentially threatening systems and could help to stabilize the relationship for decades.

Looking forward from today, the easy answer is to wait for the political context to change in a way that allows arms control talks to begin. A simple extension of New START would allow its reporting and inspections provisions to continue, even if arms reductions would slow to a halt for the first time since the end of the Cold War; nuclear modernization programs could proceed unchecked. It is a modest compromise, but an achievable one, and surely better than nothing. However, this logic is backwards. By proposing a more ambitious deal that solves real strategic concerns, the next U.S. President could undercut arms control skeptics. Proposing anticipatory arms control could help to forge a more favorable political context rather than waiting for it to develop of its own accord. Arms control was an instrumental piece of the effort to keep the last arms race from erupting into conflict; it could help to prevent the next one.

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1 The author of this paper would like to thank Ulrich Kühn, Jane Vaynman, Daryl Kimball, and Greg Thielmann for helpful discussions as well as the staff of the *Bulletin of the Atomic Scientists,* which published an earlier version of this argument, see Adam Mount, "Time for a different kind of US-Russian arms control," *Bulletin of the Atomic Scientists,* October 28, 2015, available http://thebulletin.org/time-different-kind-us-russian-arms-control8829.
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9 Though parity is sometimes thought of as a critical national security requirement, it is probably more useful as a general rule of thumb. As former Secretary of Defense Bill Perry told *Arms Control Today* recently, parity has little to do with deterrence, which is predicated on "our ability to strike." Parity is a "political argument. But that's not an argument for deterrence." Daniel Horner and Kingston Reif, "Lowering Nuclear Risks: An Interview With Former Defense Secretary William Perry," *Arms Control Today,* January/February, 2016, available at https://www.armscontrol.org/ACT/2016_0102/Features/Interviews/Lowering-Nuclear-Risks-An-Interview-With-Former-Defense-Secretary-William-Perry. See also, Adam Mount, "The indelicate balance of nuclear modernization," *The Bulletin of the Atomic Scientists,* January 28, 2016, available http://thebulletin.org/indelicate-balance-nuclear-modernization9132.

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Front page: The Missile Defense Agency successfully conducted a flight test of a three-stage Ground-Based Interceptor from Vandenberg Air Force Base, California. Jan. 26, 2013. Copyright: Missile Defense Agency 2013.

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The Deep Cuts project is a research and consultancy project, jointly conducted by the Institute for Peace Research and Security Policy at the University of Hamburg, the Arms Control Association, and the Institute of World Economy and International Relations of the Russian Academy of Sciences. The Deep Cuts Commission is seeking to devise concepts on how to overcome current challenges to deep nuclear reductions. Through means of realistic analyses and specific recommendations, the Commission strives to translate the already existing political commitments to further nuclear reductions into concrete and feasible action. Deep Cuts Working Papers do not necessarily reflect the opinion of individual Commissioners or Deep Cuts project partners.

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