

The End of Arms Control?

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For almost half a century, the United States and the Soviet Union/Russian Federation have used arms control treaties to help regulate their nuclear relationship. The current such agreement, the 2011 New START treaty, expires in 2021, although the signatories can extend it until 2026. Because of mutual mistrust and incompatible positions on what to include in a follow-on agreement, New START will probably expire without a replacement. This essay examines the reasons for the demise of treaty-based arms control, reviews what will actually be lost by such a demise, and suggests some mitigation measures. It argues for a broader conception of arms control to include all forms of cooperative risk reduction and proposes new measures to prevent inadvertent escalation in crises.

U.S.-Russian bilateral nuclear arms control is about to collapse. For decades, these two countries have used formal treaties to regulate the nuclear balance between them. The current such treaty is New START (Strategic Arms Reduction Treaty) – Russians often call it START III – which limits deployed strategic warheads to 1,550 on each side.¹ New START was signed in 2010, entered into force in February 2011, and will expire in February 2021. Its implementation has gone smoothly and New START is often considered a bright spot in the relationship between the United States and Russia. Unfortunately, that is about to change. This essay explores the reasons for the probable demise of legally binding arms control treaties, the consequences of such an outcome, and what might be done to mitigate those consequences. Because all judgments about the future are inherently suspect, the essay suggests what a follow-on treaty might consist of if – contrary to current expectations – such a treaty became feasible. Finally, it suggests a new, broader model for redefining what we mean by arms control, a model that may allow some benefits that formal treaties have not provided.

The commonest form of stupidity is forgetting what one is trying to accomplish. Why has the United States sought arms control in the first place? Many people assume arms control is an obvious good, but it is not. Instead it is one possible tool to improve national security and enhance strategic stability. Modern arms control theory starts with Thomas Schelling and Morton Halperin's seminal work, *Strategy and Arms Control*. Writing in 1961, they "use the term

‘arms control’... to mean all the forms of military cooperation between potential enemies in the interest of reducing the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it.”²

Many practitioners (including the present author) are dissatisfied with the goals implied by this definition. They doubt arms control reduces the likelihood of deliberately initiating war, which depends on political considerations. (Arms control can, however, reduce the risk of conflict based on erroneous perceptions that an attack is imminent.) Further, they question whether we know how to reduce the scope and violence of war once the nuclear threshold has been crossed. These practitioners keep a somewhat different list of what bilateral arms control can do:

1. Provide public recognition that the two sides regard one another as important equals.
2. Provide communication in difficult times.
3. Provide transparency that leads to predictability that in turn enhances stability.
4. Avoid an action-reaction arms race in which each side builds new systems in anticipation of similar moves by the other. In some cases, it may be possible to close off militarization of a specific technology.
5. Reduce incentives to preempt in times of crisis (provide first-strike stability) by shaping the structure of forces (such as by stressing bombers over missiles, or reducing the role of fixed – and thus vulnerable – intercontinental ballistic missiles [ICBMs] with multiple warheads).
6. Save money by capping expenditures on new systems.
7. Reduce the chance of inadvertent escalation caused by mismanagement during crises.

The most important use of arms control is as a means of achieving strategic stability, which in turn is a way of dealing with the terrifying reality that in the time it takes to read this essay, the United States and the Russian Federation can destroy one another as functioning societies. Neither is likely to do so because each side maintains forces that could survive a first strike and inflict devastating retaliation. As a result, nuclear war has become irrational. Because neither side can be certain of controlling escalation (especially once the nuclear threshold is crossed), conventional war between nuclear states is also – or at least should be – too risky to contemplate. This reality, called mutual assured destruction, is a frightening and unsatisfactory concept. Many experts have sought a way to move beyond it. They have not found one because mutual assured destruction is not a policy to be embraced or rejected but a fact to be accepted and managed.

In a relationship characterized by the reciprocal ability to inflict devastation, Russia and the United States have historically found the concept of strategic

stability to be helpful and perhaps even central to preventing war. By the end of the Cold War, analysts in both the Soviet Union and the United States had a similar understanding of the basic premises of strategic stability and of the importance of those principles in avoiding catastrophe. They understood that the concept was primarily bilateral and was primarily about preventing *nuclear* war. To foster such stability, the two superpowers sought policies, forces, and postures that met three criteria:

- In times of great crisis, there is no incentive to be the first to use military force of any type, nuclear or otherwise (“crisis stability”).
- In crisis or conventional conflict, there is no incentive to be the first to use nuclear weapons (“first strike stability”).
- Neither side believes it can improve its relative position by building more weapons (“arms race stability”).

Recent years have seen varying interpretations of the term “strategic stability.”³ The Russian government often uses a very expansive definition that sometimes seems to be a synonym for national security policy. As a result, some authors in this volume eschew the use of the term. But strategic stability, narrowly defined, remains the most useful concept for assessing the contributions of arms control to the prevention of nuclear war.

In addition to stability benefits, arms control treaties can help improve the overall political relationship between states. Finally, those who believe that nuclear abolition is a feasible goal want to negotiate lower numbers to move closer to zero.⁴ New START is the latest attempt to achieve at least some of these goals.

Why is a replacement for New START unlikely? The most probable reason is that the United States may conclude Russia is not a reliable negotiating partner. Russia’s cheating not only has military implications but has poisoned the political well. Besides Russian violations of the Intermediate Range Nuclear Forces Treaty (INF Treaty), the United States has formally determined that Russia is violating the Chemical Weapons Convention, Open Skies Treaty, and Conventional Forces in Europe Treaty and is not adhering to the politically binding 2011 Vienna Document.⁵ In addition to these formal determinations, the United States’ 2018 Nuclear Posture Review states that “Russia is either rejecting or avoiding its obligations and commitments under numerous agreements, including . . . the Budapest Memorandum, the Helsinki Accords, and the Presidential Nuclear Initiatives.”⁶ While Russia has thus far complied with New START, it would not be unreasonable for the United States to conclude that if New START or its replacement becomes inconvenient, Russia will violate that too.

Russians, in turn, may be skeptical that agreements with the United States will outlast the administration that made them. They could point to a series of agreed

measures taken during review conferences of the Nuclear Non-Proliferation Treaty that were ignored by subsequent administrations, to the U.S. repudiation of the Joint Comprehensive Plan of Action (JCPOA) on Iran, to the U.S. “un-signing” the Arms Trade Treaty, and to persistent rumors that the United States is considering similar action with respect to the Comprehensive Nuclear-Test-Ban Treaty.⁷ Both countries will have to overcome suspicions for future negotiations to succeed, a task made more difficult by the current tensions between them.

Even if the two sides want to negotiate a follow-on to New START, doing so may prove too difficult. There are several important issues on which the states have irreconcilable positions that one or the other side asserts must be resolved in their favor before a new strategic arms treaty would be acceptable. These issues include:

National ballistic missile defense. The United States has concluded that it must defend its homeland against a potential ballistic missile attack from North Korea or Iran. It believes that effective defense against the relatively crude, first generation missiles of these two states is technically feasible and that the United States’ limited understanding of the decision-making processes of these two governments makes it imprudent to depend entirely on deterring attack by threat of retaliation. As a result, the George W. Bush administration withdrew from the Anti-Ballistic Missile Treaty of 1972 (ABM Treaty) to deploy a national ballistic missile defense based in California and Alaska. The small size of the defenses (currently forty-four interceptors but the number is planned to increase to sixty-four) would be consistent with the ABM Treaty, but the national defense coverage would not.

The Bush administration also planned a third national defense site in Poland. The Obama administration canceled the planned site and instead deployed regional ballistic missile defenses in Europe to counter a potential Iranian nuclear missile threat to NATO allies.

Russians interpret this European deployment as aimed at them. Although the United States asserts such defenses will have no real capability against Russian strategic forces, Russian analysts and officials fear that such defenses threaten (and may be intended to threaten) its strategic deterrent. Many Russian experts accept that the current system has no real capability against Russian ICBMs, but fear that it will sooner or later be improved to gain such a capability. Russia insists that legally binding limits on the performance of European defenses are a prerequisite for any new arms control discussions. Both the previous and the current administration found such limits unacceptable. Any treaty limiting ballistic missile defenses could not be ratified by the current or any plausible future Senate. This dispute is the most serious obstacle to any future arms control agreement.

Nonstrategic nuclear weapons (NSNW). Russia has a significant advantage in so-called nonstrategic nuclear weapons (those designed for use at less than intercontinental ranges). This poses a significant threat to American allies. Russian weapons include air defense, shorter range missiles, tactical bombs, and anti-ship and

anti-submarine weapons, while the United States has only a relatively small number of tactical bombs, some of which are stored in Europe for potential delivery by NATO allies. The Resolutions of Ratification for both the 2002 Treaty of Moscow and the 2010 New START mandate including such weapons in any future arms control treaty. One approach advocated within the United States has been to agree on a single limit on all warheads, thus balancing U.S. advantages in spare weapons and upload potential against Russian NSNW advantages. Russia has rejected the concept of verifying such a limit as too intrusive, called for removal of the U.S. tactical bombs from Europe as a precondition for any discussions, and has given no indication it is willing to consider even modest data exchanges on NSNW, let alone limits.

Space-strike forces. Russia fears the United States will deploy space-based weapons capable of striking strategic targets with virtually no warning. If this were true, the threat to strategic stability would be significant. There is, however, no evidence that either side is currently pursuing such a capability, although there are individual advocates for doing so. Despite this, Russian experts routinely raise resolving the issue as a prerequisite for further arms control agreements. The proposed Russian solution is a sweeping treaty on preventing an arms race in outer space tabled in the Conference on Disarmament (a United Nations consensus-based multilateral negotiating forum that has been effectively moribund for years). The United States regards Russian proposals as unverifiable and unworkable.

Conventional strategic strike. In recent years, Russian experts have expressed concern with U.S. long-range precision strike capabilities. Their most common assertion is that such weapons, especially conventionally armed sea-launched cruise missiles, could preemptively destroy Russian ICBM silos and other strategic nuclear forces, thus limiting Russia's ability to retaliate. It is not clear how seriously the Russian government (as opposed to Russian nongovernmental nuclear security experts) takes this issue. Most U.S. experts regard the threat as fanciful and the United States has, therefore, given very little thought to how it might respond if this became a serious negotiating issue.⁸

In each of these cases, one side has demands that the other cannot (or will not) meet. If both sides maintain their current positions, no agreement is possible. In addition, there are areas in which both sides acknowledge complicating factors, but there is no obvious way to deal with them. This is a particular concern for space control and cyberspace.

The biggest challenge, however, may be political, not technical, and arises from mutual mistrust. Some senior Russian leaders (probably including President Putin) believe that the United States seeks a first-strike capability in order to coerce Russia into accepting American hegemony, and that the United States is actively seeking to change the current Russian government. In turn, many Americans are convinced that Russia is systematically interfering in U.S. and European elections to undermine faith in democracy and that its aggressive actions in

annexing Crimea and destabilizing Ukraine are threats to international peace and order. If these beliefs remain, nothing approaching stability, let alone partnership, will be sustainable over the long term, and even cooperation that is in both countries' interest will be challenging. (Because of this hostility, President Putin has prepared Russia to out-compete the United States in the nuclear domain. The United States has not taken similar steps, suggesting that the common assumption that the United States can prevail in an unconstrained arms race may be wrong.)

These issues could prevent negotiation of a replacement treaty when New START expires in February 2021. If it expires with no plans for replacement, we will face a situation in which, for the first time in half a century, no treaty regulating the nuclear balance between Russia and the United States will be either in force or under negotiation. In theory, the two sides could delay this outcome. New START allows for a single extension of up to five years without the need for ratification. Taking this option and extending the treaty to 2026 may be the only way to preserve strategic arms control after 2021. Such an extension would be no panacea. Without a solution to the problems described above, an extension only postpones the demise of bilateral arms control. But an extension would buy time to plan for a future with no formal bilateral arms control agreements. The Trump administration has made no decision on extension and does not plan to do so until sometime in 2020.⁹ In a June 18, 2019, interview, then-National Security Advisor John Bolton (widely assumed to be one of several administration officials opposed to extension and skeptical of the value of arms control in general) said of extending New START: "There's no decision, but I think it's unlikely." His primary objection was that the treaty has no limitations on tactical or nonstrategic nuclear weapons. "That flaw remains today," he said, "so simply extending it, extends the basic flaw."¹⁰

International agreements are only impossible until they aren't. As I explore below, it is clearly feasible to deal with at least some of these issues and to defer others. It is in the interests of both countries to make the attempt. But the complexity of the issues and the poor state of relations between the United States and Russia demand that, in parallel with this effort, the two states should consider how they will manage their nuclear relationship if formal arms control treaties are no longer available.

How would we deal with such a future? Because arms control is not an end in itself, but a means to ensure national security and international stability, we should start by examining the specific problems resulting from the treaty's demise. For the United States, one problem is the loss of transparency and predictability, both of which enhance stability. While most information the two sides exchange can be discerned through intelligence gathering, this process requires additional collection and analytic resources at a time of increasing demands

on the intelligence community. Some of the information New START provides cannot be obtained any other way. New START transparency benefits the United States more than it does Russia because U.S. society is inherently more open.

For Russia, bilateral arms control symbolizes the respect and equality that the country expects and believes it deserves. Strategic nuclear capability is one area where Russia is clearly an equal of the United States. Respect appears important to President Putin and most other influential Russians. It is not in the U.S. interest to foster a sense of inferiority and disrespect within a country that retains the ability to destroy the United States as a functioning society. The risk of Russia taking irresponsible action to demonstrate its power and importance is too great.

For both states, New START is one way to assert compliance with Article VI of the Nuclear Non-Proliferation Treaty and help to preserve the international non-proliferation regime.¹¹ It would be an error to overestimate the benefits of New START in demonstrating compliance with Article VI. The strong opposition from many non-nuclear states to the lack of progress on disarmament will not be assuaged by retaining New START. Still, bilateral arms control (which has been portrayed as part of a step-by-step process of disarmament) at least provides a limited counter to charges that Russia and the United States (who between them possess 90 percent of all existing nuclear weapons) are ignoring their Article VI obligations.

More generally, arms control is seen by some as demonstrating a commitment to an international order based on the rule of law, rather than the use of force. Those who believe this to be the case will equate the termination of formal arms control agreements with a shift toward more militaristic policy. Public opinion in both Russia and the United States will almost certainly assume that the demise of New START will result in the other country increasing strategic forces and that an arms race will follow.

A problem unique to the United States is the variable of congressional support for nuclear modernization. Historically, it has been necessary for administrations to demonstrate some commitment to arms control in order to gain such support.¹²

Both countries have a *de facto* policy of maintaining rough strategic parity with the other. In particular, the United States' policy of maintaining strategic nuclear forces that are "second to none" helps reassure U.S. allies that extended deterrence remains credible. Strategic arms control allows maintaining approximate parity without reigniting an arms race. There are doubtless other benefits that further thought and discussion will reveal.

After understanding the specific benefits of New START, Russia and the United States should jointly consider how, if at all, they can mitigate the consequences of its lapse. Thomas Schelling and Mort Halperin's arms control theory endorsed "all the forms of military cooperation between potential

enemies.” Over the subsequent decades, the term “arms control” has been narrowed to mean formal, legally binding, ratified treaties. It is time to reclaim the earlier, broader meaning. To do so, the United States and Russia might consider the following steps if/when New START lapses.

Increase transparency and predictability. The two countries could continue exchanging periodic data on strategic forces as a confidence-building measure and expand such exchanges to include modernization plans. They could even conduct de facto inspections as a confidence-building measure. Russian law requires some formal agreement to legitimize such inspections, but it need only be an executive agreement (as was done for the Department of Defense’s Cooperative Threat Reduction efforts). Russian agreement to such reciprocal inspections is unlikely but not impossible. Another option would be to conduct “virtual” inspections using national technical means.¹³

Avoid reciprocal increases (a “slow arms race”) as each side seeks to maintain rough parity. Russia and the United States could reach an informal agreement to exchange modernization plans routinely and not to expand nuclear arsenals above New START levels, provided the other side showed comparable restraint. Each president could codify this agreement simply by giving a speech, perhaps at the United Nations.

Engage with public opinion and inspire public confidence, both international and domestic. To counter any belief that terminating formal arms control agreements implies a shift to a more militaristic policy, senior officials of both states (including both presidents) should jointly and individually reiterate the formulation: “A nuclear war cannot be won and must never be fought.” The absence of this phrase from U.S. and Russian policy documents and speeches is an error. Russia and the United States should engage in (and publicize) serious strategic stability discussions, both official and at the Track 1.5/Track 2 level, where outside experts and (sometimes) government officials acting in their “personal” capacity conduct an unofficial dialogue with their foreign counterparts. Finally, both states should avoid inflammatory rhetoric and nuclear saber-rattling.

The best way to maintain enough visible arms control to foster congressional support for modernization would be to extend New START. If this does not happen, then to demonstrate that it has no objections to arms control as a concept, the administration could urge Senate ratification of protocols to the South Pacific Nuclear Free Zone Treaty, African Nuclear-Weapon-Free Zone Treaty, and the Treaty on a Nuclear-Weapon-Free Zone in Central Asia. These protocols provide for negative security assurances for states within a particular nuclear-weapon-free zone and agreement that the United States will not station weapons within the zone (transit is allowed). The protocols appear noncontentious within the Senate and could be ratified with administration support.

Deal with concerns over U.S. support for Article VI of the Nuclear Non-Proliferation Treaty. Because concern over Article VI among non-nuclear-weapon states is far

broader than what is covered by New START, extending New START will bring only modest political benefits and thus any actions in response to its demise will have limited impact. Russia and the United States should adopt the rhetoric that the enemy is not nuclear weapons but nuclear use and should stress provisions for risk reduction that survive New START, such as the Ballistic Missile Launch Notification Agreement of May 31, 1988, which requires the Soviet Union (now Russia) and the United States to notify one another twenty-four hours in advance of launches of ICBMs or submarine launched ballistic missiles. They should also stress the initiatives suggested below. Finally, they should support dialogue between supporters of the 2017 Treaty on the Prohibition of Nuclear Weapons (Ban Treaty) and the nuclear-weapon states, as proposed by Japan.¹⁴

Demonstrate cooperation and mutual respect. To show they can cooperate on a basis of respect and equality, Russia and the United States should maximize bilateral efforts that can be jointly led. They might intensify cooperation under the Global Initiative to Counter Nuclear Terrorism, which they cochair together. They might also consider a joint initiative to help states comply with UN Security Council Resolution 1540, a 2004 resolution that bans states from supporting nonstate actors seeking weapons of mass destruction (WMD), requires that states adopt laws outlawing possession of WMD, and mandates domestic controls over WMD in order to prevent their proliferation.¹⁵ They could sponsor a parallel initiative to revitalize discussions on controlling fissile material (including existing stockpiles as well as new production). Finally, they might cochair a series of meetings among the five nuclear-weapon states under the Nonproliferation Treaty plus India and Pakistan to discuss physical security standards for weapons protection as well as opportunities for improvements in global strategic stability.¹⁶

Thus far, this essay has assumed that New START will expire without replacement, either in 2021 or 2026. That remains the most likely outcome given the apparently intractable problems described above. It is not, however, the only possible outcome. The two sides could conclude that the benefits to each side are sufficiently compelling that a legally binding replacement treaty is in their mutual interest. The quickest way to accomplish this is to limit the replacement treaty to the scope of New START, relegating consideration of nonstrategic nuclear weapons, ballistic missile defense, and all of the other issues listed above to a separate, longer-term negotiation (perhaps under the rubric of a strategic stability dialogue) whose conclusion is not a prerequisite for ratification and entry into force of the replacement treaty. Because of the importance to NATO of constraining Russian nonstrategic nuclear weapons, the United States should seek Russian agreement on the general approach to dealing with U.S. concerns in this area as a prerequisite for ratifying the replacement treaty. The United States should be prepared to deal with Russian calls for a similar commitment on ballistic missile defense.

Under this approach, the replacement treaty would extend most provisions of New START with only modest updating. It would be necessary to deal with Russian concerns over the adequacy of the U.S. procedures for reducing the number of accountable launchers on ballistic missile submarines and for verifying the non-nuclear status of converted B-52H bombers. Procedures would also need to be included to cover novel Russian delivery systems like the Skyfall intercontinental nuclear-powered cruise missile and the Poseidon high-speed intercontinental nuclear-armed torpedo.¹⁷ Given political will, dealing with these issues should be straightforward technically, although probably time consuming. Potentially more difficult would be reaching agreement on Russian hypersonic boost-glide vehicles such as the Avangard. At a minimum, those vehicles with nuclear payloads launched from silos and having intercontinental range should count against New START limits even though they do not follow a ballistic trajectory over most of their flight range (the current definition of silo-launched missiles that count toward the treaty's limits). Aircraft capable of carrying hypersonic weapons of greater than six hundred kilometer range (an accepted delimitation range from past agreements) should count as heavy bombers.¹⁸

The replacement treaty could provide for further reductions in strategic forces, but that should not be a major objective. Stability is more important than reductions.

It may be, however, that one or both sides has a domestic political imperative to be able to claim that their issues have been addressed, at least in part. Possible solutions to this imperative could be side agreements that might include the following:¹⁹

- Although the best solution to concerns with so-called nonstrategic nuclear weapons would be an aggregate limit on all warheads, if this proved infeasible, Russia and the United States could agree to exchange information annually on the total numbers of NSNWs each side possesses, on the types of those weapons (bombs, air defense, cruise missiles, and so on), and on where such weapons were normally deployed (in general, not specific terms).²⁰
- For ballistic missile defense, the two sides could conclude a legally binding agreement to exchange plans for the numbers and locations for future deployments of ballistic missile defense interceptors over, for example, the next ten years. These plans would be updated annually and there would be a commitment not to change them without, for example, three years' notice.²¹
- To address Russian concerns about attacks from space on the surface of the Earth, the two sides could agree to ban the testing of such weapons, to be verified by national technical means. While deorbiting might be done without detection, for "space strike" weapons to destroy strategic targets with

no notice they would need to be highly accurate. Developing such accuracy implies a testing range that would be detectable.

- Because the Russian concern with “conventional strategic strike” appears primarily focused on deployed sea-launched cruise missiles, the two sides could exchange annual declarations of the planned number of such missiles with ranges above six hundred kilometers to be deployed, as well as the types of ships and submarines capable of carrying such weapons. Russian surprise attack concerns are only relevant to submarines. Drawing on the 1991 START precedent, the United States could make a unilateral political commitment not to exceed some total number of deployed sea-launched cruise missiles on general purpose submarines, setting the level high enough not to constrain U.S. operations.

With the exception of banning the testing of weapons designed for striking objects on the surface of the Earth from space – which can be effectively verified by national technical means – and, perhaps, the obligation to notify of changes in ballistic missile deployment and development plans, none of these proposals would be subject to verification. They would thus be only appropriate for political, rather than legal, commitments.

Returning to the broader definition of arms control espoused by Schelling and Halperin may facilitate new accomplishments that have thus far been elusive, especially reducing risks during crises. Formal, legally binding treaties (when complied with by both parties) have a good record of first regulating and ultimately reversing the insatiable build-up of strategic forces that characterized the early Cold War, thus providing arms race stability. Such agreements, however, have been less effective in ensuring crisis stability.²² As noted earlier, because each side maintains forces that could survive a first strike and inflict devastating retaliation, deliberate nuclear war is irrational. Further, the fact that neither side can be certain of controlling escalation (especially once the nuclear threshold is crossed) should make conventional war between nuclear states too risky to contemplate.

Unfortunately, this comforting conclusion may be wrong for two related reasons. The first is that all states possessing nuclear weapons, including Russia and the United States, are almost certainly overconfident in their ability to manage crises and prevent their escalation. Each side may take actions intended to show both resolve and restraint but that may be misinterpreted as preparations for an attack. Both Russian and U.S. military modernization and doctrinal innovations, along with the current deep suspicion between the two states, increase this risk.

For American analysts, a particular concern is what the December 2014 revision of Russian Military Doctrine calls “non-nuclear deterrence” but others have

called “prenuclear deterrence.” Although the Russians have not defined their term, some unofficial writings hint at the possibility of major misjudgment about American reactions.²³

Similarly, actions U.S. leaders might consider as showing resolve coupled with restraint during a crisis may be seen by Russia as escalatory. For example, in a Baltic crisis, sending an armored brigade into either Poland or one of the Baltic states would be intended by the United States as a deterrent to Russia and a reassurance of NATO allies, but in Russian eyes would be hard to distinguish from plans to seize Kaliningrad.

The second reason crisis management may be more difficult than expected is the nature of the new war-fighting domains of space and cyberspace. The risk is that routine acts in these two domains can be misinterpreted as precursors to an attack. Fearing that attack is imminent, a state may then take countermeasures that are in turn perceived as escalatory.²⁴

These two factors lead to a strong possibility that each side will misjudge the actions of the other in a crisis. The greatest danger is not a deliberate nuclear attack; deterrence will continue to prevent such a step. The risk of nuclear war arises almost entirely from ineffective crisis management. Here deterrence will be of limited value. As former Senator Sam Nunn stated at the 2018 Carnegie International Nonproliferation Conference, “You can’t deter a blunder.”

In an ideal world, senior military officers on both sides would routinely discuss the risks of inadvertent escalation due to miscalculation in crisis. But if Russia and the United States had the kind of relationship in which such robust discussions were possible, they would be less critical. Because it is probably infeasible to get serving military officers to have a candid discussion of inadvertent escalation, it will be necessary to conduct such a dialogue in unofficial channels using retired senior military officers. Ideally, participants would include individuals with senior leadership experience in overall strategy, European regional strategy (including the role of NATO), and strategic nuclear forces management. The selection of the right people on both sides will be crucial, as will keeping the discussions private.

Such talks should help avoid misinterpretation of conventional military actions. But that alone may not be sufficient. During a crisis, one side might believe the other was seeking to facilitate a first strike through degrading crucial space assets such as early warning or communication satellites related to nuclear command and control. To avoid this risk, each side should prepare a list of space assets for which it would regard indications of a possible attack as potentially implying preparation for a first strike. These lists should be exchanged and discussed annually. As part of this exchange, the sides should individually identify what the relevant orbital dynamics of another space body (such as a servicing satellite) would need to be in order to cause concern.

To avoid false assumption of imminent cyberattack, the sides should establish a standing group of cyber experts that meets at six-month intervals to discuss possible intrusions by third parties and how such intrusions might be detected. Using this group, the sides should identify what each believes would be indications of a possible preparation for first strike, including both systems and actions. Since both have an interest in preventing escalation in crises, they have no incentive to be disingenuous in such an exchange. If one side becomes concerned, this group should be convened in parallel with high-level diplomatic or military discussions and seek to clarify the situation. (The purpose of the routine meetings is, in large part, so the experts will be familiar with each other's thinking and approach and will thus be more effective in preventing misinterpretation.)

Making progress in improving crisis stability will probably require a combination of sustained government-level strategic stability talks (modeled after those begun in Helsinki in September 2017) and the informal efforts just described. The prerequisite for any discussion is sound and creative internal analysis. The chances of success are relatively low, but because miscalculation in a crisis is the most plausible path to nuclear war, the effort is worth making, whether New START is replaced by a follow-on treaty, by less formal arrangements, or by nothing.

This new focus will almost certainly require new forms of agreement. The JCPOA model used with Iran, whatever its substantive merits, provides a useful approach to a collection of specific commitments in different domains.²⁵ To provide confidence that the agreement will endure between administrations, it should acquire some form of congressional approval. At the same time, the agreement will need to evolve to meet technical, political, and military realities. There should therefore be a formal review and updating, perhaps every five years.

Formal, treaty-based arms control is likely coming to an end. But the need to prevent nuclear war will remain. The United States should:

- Adopt a broader concept of arms control as including all forms of cooperative effort to prevent nuclear war.
- Extend New START to preserve the transparency benefits and provide time to determine what comes next. Make the extension contingent on Russian agreement to deal with U.S. concerns on nonstrategic nuclear weapons and incorporation of new, novel Russian strategic systems. Be prepared to withdraw if Russia fails to follow through. Use the time until New START expires to explore the possibility of resolving the issues that stand in the way of a replacement agreement. Conduct an internal analysis of the form such an agreement should take and of whether the resulting treaty would be a net benefit to the United States when compared with the termination of bilateral treaty-based arms control.

- In parallel with this effort, conduct a formal assessment of the actual consequences of the demise of treaty-based arms control and how those consequences might be mitigated, drawing in part on the ideas presented above. Follow this internal examination with dialogue with Russia on mitigation of such consequences.
- Whether or not the United States elects to continue formal treaties, seek a separate dialogue with Russia on crisis management and the prevention of escalation, considering actions in all war-fighting domains including space and cyberspace.

Success in any of these efforts will not be easy. It will demand creative thinking and analysis and a willingness to consider unorthodox approaches. Gaining Russian agreement to even consider these approaches will be hard. In multiple discussions by the author with Russian experts, none of them believes a nontraditional approach is feasible. But the problem will not be improved by ignoring it. The era of Russian-American treaty-based strategic arms control as we know it is coming to an end. We can delay that outcome, though we likely cannot prevent it. But by thinking through the consequences, we can minimize the harm to our overall relations and to international stability. We should begin that thinking now.

AUTHOR'S NOTE

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Linton F. Brooks has sixty years of national security experience, much of it associated with nuclear weapons. A retired Navy officer, he has held nuclear-related assignments in the Departments of Defense, State, and Energy, the Arms Control and Disarmament Agency, the Navy staff, and the National Security Council staff, culminating in supervising the U.S. nuclear weapons program as Administrator of the National Nuclear Security Administration. Brooks was Chief Negotiator for the 1991 Strategic Arms Reduction Treaty, holding the rank of Ambassador. He also supervised the preparation of the START II Treaty. Since leaving government, he has focused on mentoring future nuclear policy experts.

ENDNOTES

- ¹ Arms control numbers can be misleading. In New START, missile launchers, the missiles they contain, and the warheads on those missiles are categorized as physical objects. Bombers, however, count as only one unit against the launcher, missile, and warhead limit, no matter how many bombs or cruise missiles they carry. Thus, as has been true in previous treaties, the actual capability allowed each side is greater than the 1,550 limit implies.
- ² Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961).
- ³ See Elbridge A. Colby and Michael S. Gerson, eds., *Strategic Stability: Contending Interpretations* (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2013).
- ⁴ Whatever the ultimate desirability and feasibility of abolishing nuclear weapons, the failure of nuclear-weapon states to show significant interest in abolition following President Obama's 2009 Prague speech, coupled with the increasing tension among the major powers, suggests that the conditions permitting serious consideration of abolishing nuclear weapons are unlikely to be present in the coming decades. As a result, abolition will not be considered further in this essay. For a description of the current U.S. approach—an initiative entitled Creating the Environment for Nuclear Disarmament (formerly Creating the Conditions for Nuclear Disarmament)—see Assistant Secretary of State Christopher Ashley Ford, “Remarks,” at The Nuclear Nonproliferation Regime—Towards the 2020 NPT Review Conference, Wilton Park, United Kingdom, December 10, 2018.
- ⁵ For details on the INF Treaty violation, see “Director of National Intelligence Daniel Coats on Russia’s INF Treaty Violation,” Office of the Director of National Intelligence, November 30, 2018, <https://www.dni.gov/index.php/newsroom/speeches-interviews/speeches-interviews-2018/item/1923-director-of-national-intelligence-daniel-coats-on-russia-s-inf-treaty-violation>. See also U.S. Department of State, *Adherence to and Compliance with Arms Control, Nonproliferation and Disarmament Agreements and Commitments* (Washington, D.C.: U.S. Department of State, 2019).
- ⁶ U.S. Department of Defense, *Nuclear Posture Review* (Washington, D.C.: Office of the Secretary of Defense, 2018), 74.
- ⁷ Donald J. Trump, “Presidential Message to the Senate of the United States on the Withdrawal of the Arms Trade Treaty,” April 29, 2019, <https://www.whitehouse>

.gov/briefings-statements/presidential-message-senate-united-states-withdrawal-arms-trade-treaty/.

- ⁸ The United States has significant military concerns with Russian conventional and nuclear strike capability at the regional level but has not thus far sought to deal with those concerns through arms control.
- ⁹ “Trump Will Decide Whether to Extend START Treaty ‘Next Year’: Official,” Reuters, May 29, 2019, <https://www.reuters.com/article/us-usa-russia-start/trump-will-decide-whether-to-extend-start-treaty-next-year-official-idUSKCN1SZ1V5>. The official quoted is National Security Council Senior Director Tim Morrison.
- ¹⁰ *Washington Free Beacon* interview quoted Shervin Taheran and Daryl G. Kimbal, “Bolton Declares New START Extension ‘Unlikely,’” *Arms Control Today*, July/August 2019.
- ¹¹ Article VI reads: “Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.” While it is clear that the arms race has largely been ended, critics argue (with some justification) that there has been no progress on nuclear disarmament. See Treaty on the Non-Proliferation of Nuclear Weapons (NPT), available at <https://www.un.org/disarmament/wmd/nuclear/npt/text/>.
- ¹² The reverse is also true, as illustrated by the commitments the Obama administration made in order to ensure the necessary Senate support for the ratification of New START.
- ¹³ For details, see Vince Manzo, *Nuclear Arms Control Without a Treaty? Risks and Opportunities After New START*, CNA Research Memorandum IRM-2019-U-01949 (Arlington, Va.: CNA, 2019).
- ¹⁴ Ministry of Foreign Affairs of Japan, *Bridges to Effective Nuclear Disarmament: Recommendations for the 2020 Review Process for the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)* (Tokyo: Ministry of Foreign Affairs of Japan, 2018).
- ¹⁵ Arms Control Association, “UN Security Council Resolution 1540 at a Glance,” August 2017, <https://www.armscontrol.org/factsheets/1540>.
- ¹⁶ This concept originated with physicist and nuclear weapons expert John R. Harvey. In the approach envisioned here, Israel would be excluded since neither Israel nor the United States acknowledges its nuclear stockpile. North Korea would be excluded because its permanent possession of nuclear weapons is not accepted by the international community.
- ¹⁷ For details on these new systems, see Amy F. Woolf, *Russia’s Nuclear Weapons: Doctrine, Forces, and Modernization* (Washington, D.C.: Congressional Research Service, updated 2020), <https://fas.org/sgp/crs/nuke/R45861.pdf>.
- ¹⁸ The question of new kinds of strategic arms is dealt with in an ambiguous fashion in both New START and the original 1991 START. Article V of New START says, “When a Party believes that a new kind of strategic offensive arm is emerging, that Party shall have the right to raise the question of such a strategic offensive arm for consideration in the Bilateral Consultative Commission.” The comparable provision in Article XV of the 1991 treaty calls on the parties to “resolve questions related to the application of relevant provisions of this Treaty to a new kind of strategic offensive arm,” but is likewise silent on what happens if no agreement is reached. The U.S. article-by-article analyses of both treaties note that there is no obligation to delay deployment while the parties are seeking to resolve the issue. In 1991, the United States assumed it would be the one to develop

new kinds of weapons and wanted to preserve its ability to exclude non-nuclear intercontinental systems from treaty limits. See Treaty Between the United States of America and the Union of Socialist Soviet Republics on Further Reduction and Limitation of Strategic Offensive Arms (START I), available at https://media.nti.org/documents/start_1_treaty.pdf; Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START Treaty), available at <https://2009-2017.state.gov/documents/organization/140035.pdf>; Office of Strategic Deterrence and Capabilities, U.S. Department of Defense, "START: Article-by-Article Analysis," <https://www.acq.osd.mil/tc/start1/START1-AAA-toc.htm>; and Office of Strategic Deterrence and Capabilities, U.S. Department of Defense, "New START Treaty: Article-by-Article Analysis," <https://www.acq.osd.mil/tc/nst/NST-AAA/AAAtoc.htm>.

- ¹⁹ Some may argue that many of these are fig leaves that do not address the underlying substantive concerns. This is largely true but may not invalidate their utility in permitting the sides to reach agreement on an otherwise desirable treaty. There is a precedent from the 1991 START I Treaty. The Soviet Union wanted to limit nuclear sea-launched cruise missiles carried on nuclear-powered attack submarines. The United States was unwilling to accept any form of verification for fear it would reduce operational flexibility. The sides agreed to reciprocal unilateral declarations (with no verification) limiting the number of deployed nuclear sea-launched cruise missiles to 880. This met the Soviet need to deal with the issue but did not constrain the United States in any way since the 880 limit was more than the United States was capable of deploying, a fact the Soviets almost certainly knew.
- ²⁰ The locations of U.S. weapons stored in Europe are widely known from various leaks but are treated as classified within the United States. The United States would need to consider whether increased transparency from Russia was worth formally declassifying these locations. The views of the host nations would obviously be a critical factor.
- ²¹ Such an agreement would meet Russian requirements for something legally binding but, given how long it takes Congress to approve and fund new programs, would not actually constrain U.S. plans. I am indebted to Ambassador Steven Pifer for the concept.
- ²² There are modest exceptions, the most important of which is the Ballistic Missile Launch Notification Agreement. A useful step would be to broaden the agreement to include other states with nuclear weapons, especially China.
- ²³ A. A. Kokoshin, "Strategic Nuclear and Non-Nuclear Deterrence: Priorities in the Modern Age," *Herald of the Russian Academy of Sciences* 84 (3) (2014). For a general explanation of the Russian approach to conflict, see Dave Johnson, *Russia's Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds* (Livermore, Calif.: Lawrence Livermore National Laboratory Center for Global Security Research, 2018).
- ²⁴ Many practitioners and analysts believe artificial intelligence may be as disruptive to stability as space and cyber, although there is little agreement on either the exact nature of the problem or possible solutions. For a discussion of the stability implications of artificial intelligence, see Christopher F. Chyba, "New Technologies & Strategic Stability," *Daedalus* 149 (2) (2020).
- ²⁵ For additional details on this concept, see James Timbie, "A Way Forward," *Daedalus* 149 (2) (2020).