

THREE-DIMENSIONAL ARMS CONTROL: A Thought Experiment

Heather Williams

The George W. Bush Administration is not typically viewed as the paragon of arms control. This was the Administration that withdrew from the Anti-Ballistic Missile (ABM) Treaty in 2002, agreed to the Moscow Treaty that same year with no verification provisions, and generally eschewed traditional approaches to arms control, including negotiations and treaties, as Cold War legacies.¹ To be sure, in practice the Administration's minimal attempts at arms control failed to produce significant results; but in principle, creative and new approaches cannot be so readily discarded. With that in mind, this article is a thought experiment. Some of the proposals suggested here are radical and come with major hurdles, but a non-traditional approach to arms control, based on opportunities rather than challenges, can hopefully generate new thinking.

In order to move beyond old-school arms control, it is useful to revisit the initial goals of arms control, mainly to: improve security and strategic stability, reduce the risks of war and damage if war occurs, and diminish defense costs.² Ultimately, arms control is both a political and military endeavor.³ It is a tool for managing existing weapons, not necessarily reducing them, nor proceeding towards nuclear disarmament. Starting from this basic point- that arms control contributes to strategic stability- suggests there is room for creativity and flexibility in arms control. It is free to move horizontally (between states), vertically (within a state), and diagonally (across domains).

¹ See for example, Christopher A. Ford, "A New Paradigm: Shattering Obsolete Thinking on Arms Control and Nonproliferation", *Arms Control Today*, November 2008.

² Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control* (Washington, DC: Pergamon-Brassey, 1985).

³ Marc Trachtenberg, "The Past and Future of Arms Control", *Daedalus*, 20:1 (Winter, 1991), pp. 203-216.

For the sake of creativity, this article offers three experimental proposals for different directions in arms control: (1) A more ambitious agenda in the “P5 Process” within the NPT, to include discussion of multilateral arms control; (2) Unilateral cuts in U.S. cruise missiles; and (3) The exchange of legally-binding limitations on U.S. missile defenses for significant cuts to Russian tactical nuclear weapons (TNW) over a ten-year duration. The article concludes with pessimism, given that all of these proposals come with serious risks or are politically unfeasible at this time. But as the strategic environment becomes more complex and crosses domains, asymmetrical arms control may eventually prove to be a useful tool for promoting transparency, predictability, and reciprocity.

Horizontal Arms Control

In its current stagnation, arms control is again being seen as an outdated “child of the Cold War.”⁴ Horizontal arms control between states is typically associated with lengthy bilateral negotiations between the United States and Soviet Union (later, Russia). Most recently, the United States and Russia agreed in 2010 to reduce their arsenals to 1,550 operational strategically deployed warheads under the New START Treaty. But at present, there are no clear pathways towards further reductions.

For the United States, arms control with Russia faces international and domestic challenges. The 2010 New START ratification vote demonstrated how partisan politics can significantly influence arms control treaties, and Congress is unlikely to support a New START follow-on until Russia returns to full compliance with the Intermediate-range Nuclear Forces (INF) Treaty. Any attempts at reducing Russia’s nuclear arsenal, quantitatively or qualitatively, are likely to be met with scepticism in Moscow, as nuclear weapons are seen as “sacred cows.”⁵

But arms control is not exclusive to U.S.-Russia bilateral reductions. Indeed, Russia insists that any further strategic reductions must involve other nuclear possessors. At present, that is unlikely given the disparity in size between their arsenals and the other nuclear possessors. But thinking more broadly, the 2015 Joint Comprehensive Plan of Action between Iran and the Permanent Five members of the UN Security Council (China, France, Russia, United Kingdom, and United States) plus Germany (P5+1) offers a recent example of successful multilateral arms control, whereby Iran agreed to verifiable constraints on its nuclear capabilities and the United States and European Union lifted sanctions on Iran. The agreement promoted stability in the region, and paved the way for future nuclear transparency and predictability.

Thinking even more broadly, arms control need not always entail reductions or rolling back existing programs, nor will it always be codified in a treaty. For example, the United States launched an International Partnership for Disarmament Verification in 2014 with 26 participating states “to develop innovative monitoring and verification solutions,” which, over the long-term, may contribute to overcoming the technical challenges of arms control and

⁴ Alexei Arbatov, “An Unnoticed Crisis: The End of History for Nuclear Arms Control?”, Carnegie Moscow, June 2015.

⁵ Alexei Arbatov, Remarks at the EU Non-Proliferation Consortium, Brussels, Belgium, September 5, 2014.

disarmament verification.⁶ In sum, horizontal arms control can entail transparency-building measures across a wider set of states.

Proposal 1: Set a more ambitious agenda in the NPT's "P5 Process"

The 2010 NPT Action Plan established the "P5 Process" in order to discuss "concrete steps for the total elimination of nuclear weapons."⁷ Since then, the discussions have resulted in a glossary of terms and a reporting template. The process could further contribute to arms control, specifically transparency-building, by pursuing any of three potential topics. First, the group could discuss the conditions that would eventually be necessary for multilateral arms control, such as the number of U.S. and Russian nuclear warheads or a specific security context. Second, similar to the International Partnership, the group could discuss the primary technical challenges to arms control verification and disarmament, building on work done by the Partnership, the U.S.-Russia-IAEA Trilateral Initiative⁸, and the UK-Norway Initiative. And third, the group could hold their own workshop on the humanitarian impacts of nuclear weapons to discuss research on nuclear weapons effects, promote nuclear education, and discuss scenarios of nuclear weapons use and consequence management.

Any of these three options would have benefits beyond arms control. Depending on the sensitivity of information, some of the topics, such as nuclear weapons effects, could be discussed with non-nuclear weapons states, which would build transparency and confidence within the NPT. Technical discussions and exercises would similarly "help to shape the nuclear disarmament debate by demonstrating the tough technical issues and questions."⁹ There is a growing divide within the NPT between nuclear possessors and non-nuclear states, and broadening the "P5 Process" would be an opportunity to bridge that gap.

Granted, expanding the P5 agenda comes with serious challenges. The group struggled to complete the seemingly modest agenda set out in 2010 due to different levels of transparency among the P5 members, a situation that is unlikely to change in the near future. Therefore, moving to a significantly more ambitious agenda seems virtually impossible at this time. In addition, multilateral arms control in general depends on various states' views on nuclear weapons, and most other nuclear states may remain reluctant to engage in any kind of arms control or disarmament until U.S. and Russian numbers are significantly reduced.¹⁰

⁶ Nuclear Threat Initiative, "International Partnership for Nuclear Disarmament Verification: Engaging a Diverse Group of States to Develop Innovative Monitoring and Verification Solution", <http://www.nti.org/about/projects/international-partnership-nuclear-disarmament-verification/>.

⁷ Tim Street, "Analysis: The P5 Process", *BASIC*, February 2015.

⁸ Thomas E. Shea, "The Trilateral Initiative: A Model for the Future?" *Arms Control Today*, June 11, 2008.

⁹ Lewis A. Dunn, "The Future Nuclear Arms Control Agenda and Its Potential Implications for the Air Force", INSS Occasional Paper 70, August 2015, p. 23.

¹⁰ Paul Ingram, "Multilateral nuclear disarmament: it would be a nice idea", openSecurity, May 6, 2015.

Vertical Arms Control

Spending cuts can hardly be characterized as “arms control.” However, when deployed forces are removed or capabilities are reduced with the expectation that it will be reciprocated, this can indeed constitute a version of arms control. The most famous example of this was the Presidential Nuclear Initiatives (PNIs) in 1991, wherein then-President George H.W. Bush announced that the United States would withdraw all ground-launched, short-range weapons deployed overseas and destroy stockpiles of the weapons, and cease deployment of TNW on surface ships, attack submarines, and land-based naval aircraft. Eight days later, Gorbachev reciprocated and pledged to eliminate all nuclear artillery munitions, nuclear warheads for tactical missiles, and nuclear mines; to remove all TNW from surface ships and submarines; and to separate nuclear weapons from air defense missiles. While the United States was the first to announce the removal of its nuclear capabilities from the region, it did so with a high degree of confidence that the Soviet Union would reciprocate.

Again, to take a broader political view of arms control, even if reductions are not reciprocated, there are other benefits of unilateral arms control. For example, the United States semi-regularly publishes the number of active nuclear warheads in its arsenal, which contributes to both transparency and stability. If there are changes in the strategic situation negating the need for certain capabilities, removing or cancelling these can improve strategic stability and reduce defense costs.

Proposal 2: Cancellation of the Long-Range Standoff Weapon (LRSO)

One potential unilateral cut in the U.S. arsenal that could prompt a reciprocal reduction from Russia is its next generation air-launched cruise missile, the LRSO. The United States Air Force currently plans to replace its air-launched cruise missile with the LRSO, a new, advanced missile; however, its development has slowed, largely due to sequestration and financial pressures. After years of delays and slipping deadlines, in its 2016 program the Air Force requested \$36.6 million for the LRSO and plans to have the first missile completed in 2026.¹¹

But the LRSO has become a topic of controversy in recent years. In an October 2015 op-ed, William J. Perry and Andy Weber called for cancelling the LRSO on the grounds that it was destabilizing. They argued that other platforms, such as the B-2 stealth bomber, can fulfil the same mission as the LRSO and cancelling the project “could lay the foundation for a global ban on these dangerous weapons,” assumedly, to eventually include Russia.¹²

There are signs to suggest Russia might eventually reciprocate such a move by the United States. It has already started to feel the financial pressure of its defense modernization, having recently cancelled plans for a rail-mobile

¹¹ Amy Woolf, “U.S. Strategic Nuclear Forces: Background, Developments, and Issues”, *Congressional Research Service*, November 3, 2015.

¹² William J. Perry and Andy Weber, “Mr. President, kill the new cruise missile”, *Washington Post*, October 15, 2015.

intercontinental ballistic missile, the Barguzin, due to budget cuts.¹³ Cutting cruise missile development and modernization could be an opportunity to further reduce costs. Given its alternative means of delivery capabilities and its nuclear modernization plans in particular, cruise missiles may not prove to offer a unique comparative advantage to Russia's strategic deterrent.

But this proposal comes with at least four major risks. First, given its argument about the strategic imbalance, Russia may not reciprocate any unilateral U.S. reductions. It is important to recall that the PNIs were only possible once the United States was highly confident Gorbachev would follow suit. Second, if the United States were to unilaterally cancel the LRSO, it could be left with a future capability gap. Third, any unilateral reductions to the U.S. arsenal at this time may be perceived as weakness among key allies, especially within NATO. And fourth, prematurely cancelling the LRSO would deny the United States a useful bargaining chip in future arms control negotiations with Russia. Therefore, the timing of cancelling the LRSO is an important consideration. The United States may still choose to unilaterally cancel the LRSO for stability and financial reasons, but should not expect Russian reciprocation at this time.

Asymmetric Arms Control

Strategic stability is increasingly complex because of new actors, new technologies, nuclear threats, and revisionist attitudes among some states. This environment is often characterized as “hybrid,” “cross-domain,” or “full-spectrum,” whereby capabilities are expanding to include not only nuclear and conventional weapons, but also electronic warfare, cyber, and information warfare. As a tool for strategic stability, arms control will also have to adapt to this widening spectrum.

Of the numerous domains frequently suggested as a potential breeding ground for arms control, cyber is one of the most popular, albeit the most challenging. As cyber-attacks are increasingly employed, it will complicate states' deterrent postures and strategic stabilities. One suggestion for incorporating cyber into arms control regimes is that it could start informally to include transparency-building measures between the United States, Russia, and China, the “minimum critical group,” as suggested by Oleg Demidov of the Russian PIR Center, in order to lay the groundwork for a future legal regime.¹⁴ But attempting to negotiate arms control for cyber will come with major challenges as well, particularly verification.¹⁵ Cyber capabilities remain some of states' most closely guarded secrets, similar to nuclear weapons in the pre-arms control era, and it may simply be too early in their development to suggest cyber as a domain ripe for arms control.

Instead, arms control can move across other domains. Traditionally, this was interpreted as one states' superiority in conventional capabilities balanced by another's nuclear superiority. But strategic stability is not just about

¹³ “Russian rail-mobile ICBM project to be axed”, *Jane's Defence Weekly*, February 8, 2016.

¹⁴ Oleg Demidov, Remarks at PIR Center Conference on Cybersecurity Governance, November 10, 2015.

¹⁵ Stephen J. Cimbala and Roger N. McDermott, “A New Cold War? Missile Defenses, Nuclear Arms Reductions, and Cyber War”, *Comparative Strategy*, 34:1 (2015), 95-111.

nuclear weapons- it never really was, as suggested by the stability-instability paradox.¹⁶ Strategic stability can be thought of in at least two ways: as the absence of full-scale conventional conflict,¹⁷ or a scenario where there is a low-risk that conventional conflict will escalate to the nuclear level.¹⁸ If strategic stability isn't just about nuclear weapons, then neither is arms control.

Proposal 3: Exchange Missile Defence for TNW

Russia wants a legally-binding guarantee that U.S. missile defenses in Europe, the European Phased Adaptive Approach (EPAA), will not be targeted at Russia. Russia sees EPAA as a threat to its strategic deterrent and, despite U.S. transparency about the missile defense plans, does not believe U.S. guarantees that the system is targeted at threats from the southeast rather than from Russia. For its part, the United States wants a reduction in Russian TNW. Indeed, when the U.S. Senate ratified New START, it did so on the condition that any follow-on arms control with Russia include TNW. Neither side is likely to make these changes unilaterally, but as a thought experiment, perhaps they would do such as an exchange.

In this proposed exchange, the United States would offer Russia a legally-binding guarantee that it would not expand beyond its current plans for EPAA for ten years. In exchange, Russia would reduce its deployed TNW down to 200¹⁹, also for a ten year duration. This would provide Russia with the assurance and stability it desires, and would bring Russian TNW closer to parity with U.S. forward-deployed TNW in Europe. It would include inspection activities of missile defences in Romania and Poland, along with Russian nuclear capabilities. This type of asymmetric arms control would improve transparency, ensure predictability for at least ten years, and be reciprocal, though not necessarily a like-for-like exchange.

But this proposal, too, is unlikely at present. From the U.S. perspective, any arms control, even non-strategic, would face challenges securing approval from the Senate, especially if the issue of INF compliance remains unresolved. Russia may simply retire the withdrawn TNW, but replace them with modern versions on mobile systems that could be quickly deployed and therefore would potentially make the situation *more* unstable. In addition, U.S. allies could see such an agreement as undermining NATO's deterrent and the credibility of Article 5, and any inspection of the missile defenses would require the participation of the host country, which would be unlikely.

From the Russian perspective, such an agreement would be too narrow, as it would not incorporate U.S. sea-based missile defenses, nor would it provide the political reassurance Russia truly desires- namely, that the missile

¹⁶ See for example, Sumit Ganguly, "Indo-Pakistani Nuclear issues and the stability/instability paradox", *Studies in Conflict & Terrorism*, 18:4 (1995), pp. 325-334.

¹⁷ Francis J. Gavin, "Same As It Ever Was: Nuclear Alarmism, Proliferation, and the Cold War", *International Security*, 34:3 (Winter 2009/10), pp. 7-37.

¹⁸ S. Paul Kapur, "India and Pakistan's Unstable Peace", *International Security*, 30:2 (Fall 2005), pp. 127-152.

¹⁹ Russia may have up to 4000 non-strategic nuclear warheads, 2000 of which may be active and assigned to delivery vehicles. See Amy Woolf, "Nonstrategic Nuclear Weapons", *Congressional Research Service*, March 23, 2016.

defenses are not targeted at Russia. Another hurdle is more historic: Russia could insist on parity with nuclear weapons in Europe, rather than U.S. forward-deployed nuclear weapons, whereby British and French arsenals would also have to be included in the counting. Parity, therefore, could allow Russia to maintain at least 600 TNW.

And Now, a Reality Check

To reiterate, this is a thought experiment and by no means should the proposals set forth here be perceived as recommendations. Rather, they are meant to demonstrate the potential ongoing utility of arms control when it is thought of more broadly, but also to demonstrate the necessity of linking arms control to politics and the geostrategic context. Arms control should never be pursued for the sake of it.

Arms control as a political tool may have a limited role in the current climate for various reasons. It is typically a slow, step-by-step, trust-building process. While states can lay the groundwork now for further arms control, the benefits may not be realized for years or even decades to come. The United States and Russia, as the historical leaders in arms control, face their own sets of challenges in many of these approaches and they may no longer be credible arms control champions.²⁰ For the United States, it must decide how committed it is to arms control and cooperation as a tool for strategic stability. It also must continue to negotiate the balance between reassuring allies and deterring potential adversaries. The present time may not be conducive to arms control and, therefore, it should not be forced. Instead, the United States in particular can adopt a policy of strategic patience in waiting for Russia to return to the negotiating table, or continue to develop original initiatives beyond strategic bilateral arms control, such as the International Partnership.²¹

Of the various proposals put forth here, asymmetrical arms control would seem to offer the most potential but also the most challenges. Classic arms control texts by Thomas Schelling, Morton Halperin, and Hedley Bull, among others, outlined the primary goal of arms control as “improving states’ security and strengthening strategic stability.” But strategic stability itself is a changing balance, as the past two years have demonstrated, and therefore, the arms control toolkit may have to adapt with it.

²⁰ Ariane Tabatabai, “After Iran, can the US lead on arms control?” *Bulletin of Atomic Scientists*. September 11, 2015.

²¹ Heather Williams, “Russia Still Needs Arms Control.” *Arms Control Today*. January/February 2016.