IFSH
Institute for Peace Research
and Security Policy
at the University of Hamburg

RESEARCH REPORT
#002

Trilateral Arms Control?
Perspectives from Washington, Moscow, and Beijing

ULRICH KÜHN (ED.) / ALEXEY ARBATOV /
DAVID SANTORO / TONG ZHAO | 03/2020

Ulrich Kühn (ed.)/Alexey Arbatov/ David Santoro/ Tong Zhao

Trilateral Arms Control? Perspectives from Washington, Moscow, and Beijing

Table of Contents

Foreword

With the end of the INF Treaty in 2019, trilateral arms control – meaning arms control between the United States, Russia, and China – has gained center stage. Only shortly after the U.S. withdrawal, U.S. President Trump declared that he wants a new nuclear pact to be signed by both Russia and China. Other U.S. administration officials have set the goal of including China in a future follow-on framework to the New START agreement, which expires in February 2021.

It is easy to dismiss the idea of trilateral arms control or arms control with China as far-fetched and just another lofty goal of the mercurial Trump administration. However, a couple of reasons speak quite strongly for a novel format that would go beyond the Cold War-style U.S.-Russian bilateralism. As the world enters an age of seemingly unconstrained great power competition, arms control between the "big three" could help strengthen arms race and crisis stability and provide a platform for strategic dialogue. Also, now that the bilateral frameworks between Washington and Moscow are eroding, bringing in China could signal to the rest of the world that nuclear arms control has a future. The latter could help to renew the disarmament promise that nuclear-weapons states have signed up to under the NPT.

Then again, could trilateral arms control be possible at all? What would be necessary conditions? Why should Washington, Moscow, and Beijing engage in an uncertain endeavor that promises to significantly affect their strategic relationships? Those are just three of the questions I asked the authors of this report to address. It is important to note that the goal of this report was never to arrive at a consensual opinion on trilateral arms control. Rather, I asked Alexey Arbatov (Russia), David Santoro (United States), and Tong Zhao (China) to reflect on their respective national perspective and outline potential ways forward. What is encouraging, none of the authors sees trilateral arms control as pointless or impossible. They all find reasons why their respective nation would benefit from such a format.

Even though the time might not be ripe for arms control between the "big three," it definitely makes sense to start thinking about the possible goals of and approaches to trilateral arms control.

Ulrich Kühn (editor), Hamburg, March 2020

Executive Summary

None of the three authors deems trilateral arms control – meaning arms control between the United States, Russia, and China – impossible or pointless. Instead, all three list compelling reasons why their respective nation would benefit from such a trilateral format. They even agree that trilateral engagement should start now. Though, they also agree that under current conditions, many trilateral arms control options will most likely have to wait and would only be possible over the mid to long term.

None of the three authors excludes the possibility that the next round of nuclear arms control would still, initially, be only between the United States and Russia or that Washington and Beijing might agree on a bilateral framework before arms control goes trilateral.

All three authors recommend their governments to engage further in nuclear arms control, including in various already existing formats. In particular, all three agree that the New START agreement, limiting the strategic forces of the United States and Russia, should not simply be left to expire in 2021. Instead, the agreement should be extended for another five years.

Against the background of great power competition between the United States, Russia, and China, the authors see a heightened potential for arms race and crisis instability, particularly in East Asia, should unconstrained nuclear and conventional competition ensue. In that regard, particularly the end of the INF Treaty creates uncertainties for regional and global security and could contribute to additional arms racing in various weapons systems, the authors conclude.

Any future trilateral arms control arrangement should, according to the authors, take into account the asymmetric nature of the nuclear balance between the United States and China as well as between Russia and China. These asymmetries affect their latent or actual deterrence relationships, their postures and doctrines, and potential future arms control measures. These asymmetries also imply the need for a certain amount of flexibility in the systems covered should it ever come to the stage of defining the scope of trilateral arms control.

According to the authors, the three countries should publicly acknowledge that they are mutually vulnerable in order to help strengthen strategic stability. In that regard, all authors identify U.S. ballistic missile defense systems as a serious obstacle to progress on arms control, which could be solved were compromise possible.

In the near term – the authors stress to varying degrees – all sides should engage in confidence-building measures that could prepare the ground for later reductions, including military-to-military contacts, capacity-building efforts, and increased track 1.5 exchanges.

All three authors agree that a future trilateral arrangement or a bilateral Chinese-American arrangement cannot be based on the idea of exclusively constraining China's capabilities. Rather, any future format would have to find a give-and-take formula that somewhat satisfies the respective national interests.

As regards the scope of a potential trilateral arms control arrangement, the three authors suggest and discuss different though also similar approaches that could involve forces considered "strategic" under New START, those of INF-range under the now defunct INF Treaty, and sea- and air-based systems outside of the INF Treaty's original land-focused scope.

In order to address asymmetry in systems and numbers between the three countries, the authors prefer not to end up with an arms control arrangement that legalizes massive increases in numbers in order to arrive at more symmetrical ceilings. According to the authors, such possible solution would run counter to international disarmament obligations. Alternatively, also the option of mixing certain systems under equal umbrella ceilings is discussed.

A U.S. Perspective on Trilateral Arms Control: A Long Shot – Within Reach

David Santoro

1. INTRODUCTION

"I am certain that, at some time in the future, President Xi and I, together with President Putin of Russia, will start talking about a meaningful halt to what has become a major and uncontrollable Arms Race."[1] This was a tweet by U.S. President Donald Trump sent on December 3, 2018 on the heels of the U.S. decision to withdraw from the U.S.-Russia Intermediate-Range Nuclear Forces (INF) Treaty and amidst questions about the future of New START. It was the first time a U.S. president officially called for an expansion of nuclear arms control, which so far has been bilateral: between the United States and the Soviet Union during the Cold War, and then between the United States and Russia.

Trump's tweet was not a vague wish expressed in a random tweet. In his 2019 State of the Union Address, the President suggested there should be a new INF Treaty that would include China and others. [2] Two months later, he insisted that the United States, Russia, and China should "[come] together" to control the arms race and, later that month, Secretary of State Mike Pompeo said that the next agreement should be more comprehensive and include China.[3] News reports followed indicating that Trump had ordered his administration to prepare for a comprehensive, trilateral arms control push, and senior administration officials explained they would approach Moscow and Beijing separately and together.[4] Former officials from the George W. Bush administration, too, stressed that "China's nuclear forces must also be included in any future [arms control] negotiations."[5] Then, in May, Republican senators Tom Cotton and John Cornyn, along with Republican representative Liz Cheney, introduced legislation that would prevent New START extension unless, among other things, China were made a party, and senior administration officials Andrea Thompson and David Trachtenberg also stressed that Russia and China should be brought to the arms control table.[6]

Yet when Trump publicly said that he and Putin had discussed making a "three-way deal" with China, adding that Beijing "would very much like to be part of

that deal," the Chinese leadership denied and rejected the offer.[7] Beijing then reiterated its opposition repeatedly, echoing its earlier rejection of joining a new INF Treaty.[8]

China has argued that the United States and Russia should continue to lead on arms control because, despite having undertaken important nuclear reductions since the end of the Cold War, they still have much larger arsenals than China and other nuclear-armed states. This is a solid argument. Today, of the 13,890 nuclear warheads believed to exist in the world, the United States and Russia possess 12,685 and the rest is split between France (300), China (290), the United Kingdom (215), Pakistan (150), India (140), Israel (80), and North Korea (25).[9] Therefore, much like the French, UK, Pakistani, Indian, Israeli, and North Korean arsenals, the Chinese arsenal is a small fraction of U.S. and Russian forces.

For now, U.S. thinking about trilateral arms control is unclear. It is unclear if U.S. officials want incorporation of China into New START, or if they want a new agreement. If they want the latter, it is unclear if that agreement would focus on nuclear warheads or deployed forces, or if it would include a verification regime. Recently, there have even been suggestions that Washington may engage Russia and China separately first. Christopher Ford, Assistant Secretary at the Department of State's Bureau of International Security and Nonproliferation, stated in December 2019: "We want to engage directly with our Russian and Chinese counterparts in bilateral and ultimately trilateral talks on strategic security, nuclear posture and doctrine, and the role of nuclear weapons in our respective security postures, with an eye to setting in place measures to deliver real security results to our nations and the entire world."[10] Shortly thereafter, Ford invited Russia and China to bilateral "strategic security dialogues" with the United States; a U.S.-Russia dialogue round took place in mid-January 2020, while China did not respond.

2. WHY TRILATERAL ARMS CONTROL IS HERE TO STAY

Still, trilateral arms control is here to stay, for three reasons. First, because Trump is personally interested. In a March 2018 call with Putin, Trump had already stated that he wanted to bring the arms race under control.[11] Trump has also had a longstanding affinity for arms control because it presents an opportunity to showcase his self-promoted deal-making skills.[12] Besides, Trump is serious about bringing China into the arms control fold: China has been a major focus

of his foreign policy, a country his 2017 National Security Strategy (NSS) deems "revisionist," and against which his administration has orchestrated comprehensive pushback.[13]

Beyond Trump, while Republicans have proved more skeptical than Democrats, there is general agreement in the United States that arms control is good for the country. Americans believe it helps maintain stable and predictable relationships with competitors. The 2018 Nuclear Posture Review (NPR), for instance, states that arms control "can foster transparency, understanding, and predictability in adversary relations, thereby reducing the risk of misunderstanding and miscalculation."[14] Americans also believe arms control helps sustain U.S. extended deterrence and alliance cohesion, and that it benefits U.S. nonproliferation policy; the United States, as the other "Nuclear-Weapon States" (NWS) identified in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), is required to move toward disarmament, and Washington has regarded arms control as one of these steps.[15] As the United States is refocusing on Asia and, in so doing, getting into an increasingly competitive relationship with China, a bipartisan issue that will extend beyond the Trump administration, incorporating China into arms control will continue to gain traction.[16]

Second, trilateral arms control is unlikely to die because Moscow is not opposed to it. The Russians agree with Americans about arms control. Russia's Deputy Foreign Minister Sergei Ryabkov, for instance, listed predictability as one of arms control's core contributions to Russian security and Moscow, too, thinks that arms control helps Russia fulfill its NPT obligations. Moreover, as explained later, despite growing closeness and cooperation between Russia and China, there is a deterrence relationship between the two countries. That is why Moscow has long called for arms control multilateralization and, while the Russians have also been interested in involving the United Kingdom and France (the two nuclear-armed U.S. allies), they have welcomed the U.S. call for trilateral arms control. Ryabkov stated: "When our American colleagues actually get to the point where they give us something concrete, we will look at this with interest and I hope in a positive way."[17]

Third, the push for trilateral arms control is unlikely to go away because arms control multilateralization is the plan at the core of the NPT. Arms control began as a bilateral process (U.S.-Soviet, then U.S.-Russia) because these two countries have held most nuclear weapons. Yet the NPT and subsequent decisions made under its umbrella have made clear that all NWS are required

to lead on disarmament and, therefore, engage in arms control. There has also been general agreement that the "NPT holdouts," i.e., the countries that have developed nuclear weapons outside the NPT (India, Israel, Pakistan, and now North Korea), are required to disarm. This cannot be dismissed, especially given the development of the nuclear-disarmament norm, which has become so strong recently that a new process has emerged outside the NPT. Frustrated by what they deem to be slow disarmament progress, several countries and civil-society movements have sought fast nuclear-weapon elimination under the banner of the new Treaty on the Prohibition of Nuclear Weapons. Yet because nuclear weapons cannot disappear overnight (because they are tied to security realities), arms control will continue to be the only viable answer. The pressure is on, however, for it to deliver results faster, and do so beyond the bilateral format.

Analysts frequently suggest that arms control multilateralization should begin with all NWS, i.e., that China, France, and the United Kingdom should join Russia and the United States, building upon the "P5 process" established in 2009.[18] NPT holdouts should then follow.

There is, however, a good rationale for incorporating only China first. Not just because expanding the process further would be too big to manage, but also because unlike China, the other nuclear-armed states will either not increase their forces (France, Israel, the United Kingdom) or do so by a few dozen (North Korea) or hundreds (India and Pakistan). Plainly, the impact of the nuclear decisions and developments made by these seven states will remain limited. Nuclear dangers will increase because of choices made in New Delhi, Islamabad, and Pyongyang, but the consequences will be either managed (by sanctions and extended deterrence for North Korea) or remain contained at the sub-regional level (in South Asia for India and Pakistan). By contrast, China has been building its arsenal steadily, both quantitatively and qualitatively and, recently, it has done so fast. Besides, China has been building up in an opaque manner: Beijing has not been transparent about its modernization program, fueling speculations about its intent, particularly given that the Chinese leadership has adopted an increasingly assertive posture. The considerable financial and technological resources that Beijing has at its disposal also give China the option to grow its arsenal much bigger, much faster.

China must be aware of these dynamics. By now, it must know that competition with the United States is here to stay and that the nuclear dimension of the bilateral relationship will not be insulated. As detailed later, the United States has

insisted that China was a key driver in its decision to withdraw from the INF Treaty. Beijing, therefore, must be beginning to wonder if it is still in its interest to stay out of arms control and face the prospect of uncontrolled nuclear competition.

Accordingly, it is timely to start thinking about trilateral arms control and how it could take shape.

3. THE STRATEGIC SITUATION BETWEEN THE UNITED STATES, RUSSIA, AND CHINA: PAST, PRESENT, AND LOOMING DYNAMICS

To provide focus for a trilateral arms control plan, it is important to begin with an analysis of the nuclear dynamics between the United States, Russia, and China. Relationships between these three countries have evolved but each state has envisaged major war with either of the other two, leading each to try to deter both. Relationships between the three countries, therefore, have all been deterrence relationships. That means arms control has a role to play: arms control is only meaningful if there is a possibility of conflict between states.

3.1 THE UNITED STATES AND RUSSIA

The United States and Russia have held most of the world's nuclear weapons and have been nuclear peer competitors, even though they have used arms control to push nuclear weapons into the background of their relationship. However, the U.S.-Russia relationship has deteriorated so much recently that it is threatening arms control and setting the stage for renewed nuclear competition.

During the early Cold War, Washington and Moscow engaged in intense arms races, only to realize after dangerous crises (Berlin in 1961 and Cuba in 1962) that they were better off regulating their competition through arms control. This began with a "hotline" (1963) and then limitations of, and reductions on, U.S. and Soviet offensive and defensive arsenals with the Strategic Arms Limitation Talks Agreement (SALT) and the Treaty on the Limitation of Anti-Ballistic Missile (ABM) Systems (1972), the INF Treaty (1987), and the START process (which began in the 1980s). Arms control required U.S. and Soviet leaders to think beyond fighting and winning wars and accept that, because they were mutually vulnerable, they should regulate their forces, and keep them roughly on par.[19] Both Washington and Moscow, however, continued to pursue damage-limitation strategies.[20]

With the collapse of the Soviet Union and the end of the Cold War, as Russia was in transition, U.S.-Russia competition gave way to partnership, and there was an opportunity to push nuclear weapons into the background. Significant progress was made. Washington and Moscow cooperated to repatriate to Russia the nuclear weapons scattered in the territories of the former Soviet Union. They engaged in nuclear-security work, agreed to reciprocal reductions in sub-strategic nuclear weapons (1991), and reduced strategic nuclear weapons through START (1991). Moreover, Washington and Moscow negotiated START II (1993), began thinking about START III (1997), and agreed on responses to emerging missile threats from the Middle East and Northeast Asia in a manner consistent with the ABM Treaty (1997).

From the late 1990s, however, the U.S.-Russia relationship went from bad to worse. With Putin in power, the hopes of turning Russia into a democracy dissipated. Putin also became confrontational toward the United States and the West, which, he believed, had taken advantage of Russia's weaknesses and encroached on its interests and "near abroad" by intervening in the former Yugoslavia, enlarging NATO up to Russia's borders, and allegedly backing the color revolutions in Georgia and Ukraine. Unsurprisingly, the U.S.-Russia strategic relationship suffered. Russia ratified START II (2000) on the condition that the U.S. Senate approve the ABM Demarcation Agreement, which proved impossible and led to Washington's withdrawal from the ABM Treaty and then Russia's withdrawal from START II (2002), paving the way for the U.S. decision to create in Europe a U.S. ballistic missile defense (BMD) site to protect the U.S. homeland (2007). This did not prevent U.S.-Russia cooperation, especially after 9/11, and arms control resumed with the ratification of the Strategic Offensive Reductions Treaty (SORT, 2003). But problems remained. Moscow became worried about U.S. BMD and strategic conventional weapons, believing that behind its claim that it only wants protection against "rogues" such as North Korea or Iran, Washington was after "absolute security": the ability to defend against, and even prevail over, Russia.[21]

The U.S. attempt to reset the U.S.-Russia relationship in the late 2000s failed. A key factor was what Moscow perceived to be NATO's aggressive action in Libya, which extended beyond its mandate and suggested that the United States wanted to act as a hegemon. The reset helped deliver New START (2010), but did not resolve Russia's concerns over BMD and strategic conventional weapons.[22] So, when in 2013 Washington proposed that U.S. and Russian strategic forces be reduced further, and sub-strategic and non-deployed forces constrained,

Moscow declined. Moscow wanted an agreement that included not only strategic offensive weapons, but also BMD, strategic conventional weapons, and space and counter-space weapons, and it pushed for the multilateralization of the process. This proved impossible for Washington, which wanted a narrower bilateral agreement and BMD for protection against rogues; Washington tried, unsuccessfully, to address Russian BMD concerns.[23]

The U.S.-Russian relationship then took a turn for the worse with Russia's annexation of Crimea (2014) and intervention in eastern Ukraine, which Putin justified to protect Russian interests against U.S./Western overreach. Russia's interference in the 2016 U.S. presidential election, intervention in Syria, and attempted assassination of a UK national and his daughter using chemical weapons deepened the crisis. Putin's post-Crimea promise to "snap back hard" if threatened brought nuclear weapons back into the foreground, especially when four years later, in 2018, the Russian president unveiled two novel strategic nuclear weapons.[24] This drove the United States to rethink nuclear deterrence and, in the context of launching its modernization program (to follow Russia, which began modernizing in 2011), led to the decision to advance two new nuclear weapons.[25] This also contributed to the U.S. decision to withdraw from the INF Treaty, which Washington had assessed Moscow was violating since 2014, and raised questions about the future of U.S.-Russia arms control, particularly given Russia's insistence that the next round should be comprehensive and include BMD.[26] This was a redline for Washington, which was preoccupied by Moscow's sub-strategic forces. By the end of the 2010s, therefore, the U.S.-Russia arms control partnership was falling apart, foreshadowing renewed competition.

3.2 THE UNITED STATES AND CHINA

Lately, the U.S.-China relationship has deteriorated so much that there are now signs of spillover effects into the strategic relationship, which, for the first time, could make nuclear weapons a key feature of U.S.-China dealings. Yet, unlike the United States and Russia, Washington and Beijing are not nuclear peers and they do not have an arms control relationship.

U.S.-China relations were tense in the early Cold War, especially when it became clear, notably after the Korean War (1950-1953) and Taiwan Strait confrontation (1954-1955), that Beijing was developing a nuclear arsenal, initially with Soviet assistance.[27] Washington, however, quickly realized that Sino-Soviet nuclear cooperation never materialized because Moscow, too, was concerned about

Beijing going nuclear. That led U.S. officials to try and prevent Beijing from reaching its goal by promoting arms control and nonproliferation, and exploring military options, including with the Soviets.[28]

Yet, after Beijing tested its first atomic device in 1964, Washington decided that the United States could live with a nuclear China. The belief was that the benefits of U.S.-China rapprochement outweighed the costs and that the United States was better off with China on its side against the Soviet Union. Another reason was the realization that China was primarily concerned with the Soviet Union, not the United States, and that Beijing had neither the ability nor, seemingly, the willingness to engage in nuclear competition. Unlike Washington and Moscow, Beijing developed a strategy of assured retaliation and did not pursue nuclear warfighting. That is why Beijing has claimed to have a "self-defense nuclear strategy," why it has adopted a no-first use (NFU) policy, and why it has "only" developed a small nuclear force, which it has kept de-mated.[29]

Through to the late 2000s, therefore, the United States was interested in engaging China.[30] The hope was that China would transform into a power that accepted the existing international order, endorsed market forces, and implemented democratic reforms.[31] The United States also adopted such an approach because it had other priorities: the Soviet Union during the Cold War, the loose-nuke problem after the Soviet collapse, then small actors with nuclear-weapons ambitions, and the strengthening of the nonproliferation and nuclear-security regimes.

But from the late 2000s, Beijing became critical of the international order and began to assert itself, notably in Asia. Moreover, instead of endorsing market forces, Beijing began to expand mercantilist tools, and the Chinese Communist Party, especially under Xi Jinping's rule, became more repressive and more nationalistic, seemingly to achieve the "China Dream" of national rejuvenation.[32] Washington also became concerned because Beijing ramped up the modernization, diversification, and expansion of its strategic force, notably of its short- and intermediate-range systems (systems banned by the INF Treaty, to which China was not a party).[33] Concerns ran high because Beijing does not reveal the size and shape of its nuclear arsenal, or the goal of its modernization program.

Beijing, however, argued that its developments are defensive, that it has always maintained a self-defense nuclear strategy and NFU policy, and that its

modernization efforts are consistent with its tradition of minimum deterrence and solely aimed at developing a "lean and effective" force. These are codewords to stress that the goal is for Chinese forces to remain reliable and survivable, especially as U.S. BMD and strategic conventional weapons improve, and as the U.S. refocuses on Asia. China has had the same worries as Russia: that it may become the target of such U.S. military developments because the United States allegedly seeks "absolute security." China has been especially concerned because the United States has refused to accept an NFU policy and the existence of mutual vulnerability between them, suggesting that Washington is not ruling out launching a disarming strike against Beijing.

Yet in addition to doubting the strength and veracity of China's NFU policy, the United States has become concerned that Beijing may abandon minimum deterrence and "sprint to nuclear parity" with Washington (and Moscow), especially as that the latter have been building their nuclear arsenals down.[34] Concerns have also increased because, besides refusing to be transparent about its activities, China has rejected nuclear dialogue (and arms control) despite repeated U.S. invitations, and adopted an assertive military posture.[35]

The relationship deteriorated further from the mid-2010s, when the United States identified China as a major competitor and began pushing back against Beijing. In the context of Beijing's military reforms (launched in 2015) and with uncertainty, despite Chinese reassurances, about the impact on Chinese nuclear strategy and weapons programs, the United States now seems to have opted for nuclear competition with China because it is easy to increase and cement its (already immense) superiority over Beijing, and because Washington has likely concluded that it is necessary given that the regional balance of power is shifting in China's favor. The idea is that a more decisive U.S. nuclear advantage over Beijing will compensate for Washington's widening loss of conventional superiority in the region (mostly given the growth of China's intermediate-range arsenal).[36] That is why the U.S. decisions to develop two new nuclear capabilities and withdraw from the INF Treaty were made with Russia and China in mind. Significantly, a senior administration official said that China's growing military force was "the strategic reason for the U.S. INF withdrawal."[37] By the late 2010s, therefore, while questions remained, the U.S.-China relationship appeared ripe for rivalry, with the prospect of nuclear weapons being brought into the foreground of that relationship.

3.3 RUSSIA AND CHINA

Russia and China are neither allies nor adversaries. Best described as "complicated," their relationship has become increasingly cooperative recently. The chief reason: confronting the United States, hence why their relationship has been called an "axis of convenience."[38] Still, Russia and China have a deterrence relationship, one that is both imbalanced and implicit.

The Soviet Union and China were allies (against the United States) in the early Cold War before splitting over competing visions for communism and Soviet reluctance to share nuclear-weapon technology with Beijing. The relationship reached a low point in 1969 when Moscow and Beijing engaged in border skirmishes and, later, when Moscow considered striking China's nascent nuclear-weapons program.[39] From the 1970s through to the end of the Cold War, after Washington attempted to cement the Soviet-Sino split by engaging Beijing, the Soviet Union and China remained wary neighbors.

After the Cold War, most analysts expected the Russia-China relationship to deteriorate because the two countries share a long land border and have different power trajectories and competing interests in Central Asia, Eastern Siberia, and the Arctic. Yet the trend has been toward greater cooperation. In 1994, Moscow and Beijing sealed a "constructive partnership," which translated into a mutual NFU agreement. In 1996, Moscow and Beijing upgraded their relationship to a "strategic partnership" and, in 2001, signed a "Treaty of Good-Neighborliness and Friendly Cooperation." Then, in 2011, they signed a "comprehensive strategic partnership," which has helped expand cooperation. By 2019, cooperation had deepened so much that Putin described Russia-China relations as "almost an alliance-type relationship."[40]

Cooperation has taken several forms. Russia has exported military hardware to China, including modern air and missile defense systems, such as the S-400, and has begun assisting Beijing to develop early-warning systems. Russia and China have also participated in the other's military exercises, and the two countries have conducted combined drills. Moreover, Moscow and Beijing have pursued low-level CBMs, notably by concluding a ballistic missile launch notification agreement (2009), and they have coordinated their opposition to many U.S. policies, such as on BMD and strategic conventional weapons. In June 2019, they issued a joint statement on "global strategic stability," the second of its kind (the first was in 2016), in which they criticized "Some individual powers [for

pursuing] unilateralism and bullying" and identified themselves as the "stability anchor" for world peace.[41]

There is a deterrence relationship between Russia and China, however, even though neither acknowledges it. As in the U.S.-China relationship, the stronger power (Russia) does not recognize that it is worried about, let alone mutually vulnerable with, its weaker counterpart (China). Yet Moscow is concerned. Russia's Military Doctrine states that Russian nuclear weapons help prevent "an outbreak of nuclear military conflicts involving the use of conventional arms (large-scale or regional war)."[42] As two Russian analysts have explained, the terms "regional war" can only mean a conflict with China because war with the United States/NATO would be larger than regional.[43] Moreover, in calling for arms control multilateralization, Moscow has made clear that it is concerned that Beijing may "sprint to parity" as U.S.-Russian reductions continue. Similarly, while there is no evidence to substantiate it, China, too, must be worried about its much stronger northern nuclear neighbor, and some of its short- and intermediate-range missiles probably target Russia. Even as Russia-China ties are strengthening, therefore, an imbalanced and implicit deterrence relationship exists between the two countries, limiting the potential for cooperation. Because the trajectory is up for China and down for Russia, deterrence may soon play a greater role.

The three bilateral relationships differ greatly. There is a symmetric deterrence relationship between the United States and Russia, one that is worsening and could end their arms control partnership and lead to renewed nuclear competition. By contrast, the United States and China have an asymmetric deterrence relationship, with the former dominating over the latter. That relationship, which does not include an arms control partnership, is also deteriorating and could lead to nuclear competition. Meanwhile, the Russia-China deterrence relationship is asymmetric, too (with Moscow dominating over Beijing) but also latent, and both Moscow and Beijing are strengthening their ties, while steering clear of arms control. Overall, there is a dynamic beyond intensification of the bilateral relations: a three-part system is emerging, one characterized by an odd man out (the United States) but also three-way counterbalancing moves.[44]

4. OUTLINE OF A TRILATERAL ARMS CONTROL PLAN

In this strategic configuration, conceptualizing a trilateral arms control plan is possible. It must be done against the backdrop of the theoretical ends, ways,

means, costs, and risks of arms control, and, to work, such a plan would have to be based on an asymmetric framework and require flexibility from all three countries.

4.1 BACKGROUND ON ARMS CONTROL

Consider first the ends of arms control. Arms control is not about eliminating nuclear weapons; this is disarmament. Arms control also is not about locking in an advantage against a competitor. Rather, it is, per its original theorists, a tool states can use to enhance their security by maintaining strategic stability with their competitors, i.e., to prevent war and arms competition.[45] Because they have their roots in the Cold War, strategic stability and arms control have also traditionally been associated with nuclear weapons and the U.S.-Soviet competition.[46]

To foster strategic stability, arms control parties need to exercise restraint over, or impose constraints on, their nuclear policies, strategies, forces, and postures to ensure that they meet two criteria. First, that there is no incentive for either party to be the first to use military force in a crisis ("crisis stability"). An associated concept is "first-strike stability," the removal of incentives for either arms control party to be the first to use nuclear weapons to disarm its opponent.[47] Second, arms control parties need to remove incentives for them to improve their position by building more or better weapons ("arms-race stability"). As one analyst has summed up, the idea is for arms control parties to reach an equilibrium, or a balance between them, and encourage equanimity, "the ability of states to avoid escalation and return to a state of equilibrium despite perturbations in the international system, such as the emergence of new technologies, threats, crises, or conflicts."[48] These are the ways of arms control and, historically, strategic stability has rested on mutual assured destruction (MAD), the idea that each side need to maintain forces that can survive a first strike and inflict damage in retaliation that the attacker would find unacceptable, thereby making nuclear or major conventional war irrational and arms races pointless.[49] This was the organizing principle for U.S.-Soviet relations during the Cold War and it is still the foundation for U.S.-Russia relations today. De facto, as suggested earlier, a MAD relationship also exists between the United States and China, and between Russia and China, even though mutual vulnerability is neither acknowledged nor equal in these relationships.

Regardless of the specific means of arms control, transparency is a must because transparency leads to predictability and predictability is a prerequisite to both crisis and arms-race stability. While treaties have traditionally been the means of choice, many other, less formal means exist. Reciprocal unilateral actions, CBMs, reciprocal restraint, or regular strategic dialogue and military-to-military discussions to improve mutual understanding on the parties' thinking on specific issues or emerging technologies are all valuable arms control means.

Turning to costs, it is important to stress that arms control requires its parties to abandon the pursuit of superiority, at least in some categories of weapons or domains. It requires them to acknowledge mutual vulnerability, either explicitly or implicitly, and to be willing to preserve it. Relatedly, arms control requires its parties to negotiate among one another and, therefore, to make compromises and engage in a give-and-take process.

Finally, arms control is not risk-free. An arms control party can conclude an unfavorable agreement, one that leaves him at a disadvantage vis-à-vis the other parties. Other risks include the loss of secrets, or that one of the parties cheats, scoring gains over the other parties even as the latter have a (false) sense of security. Still, while acknowledging these risks, the first theorists stressed the value of arms control. Herman Kahn said: "We must be willing to do [arms control] even though we may thereby run great risks, since the alternative, an uncontrolled situation, probably involves greater risks."[50]

Against this backdrop, a trilateral arms control plan requires two key features: asymmetry and flexibility.

4.2 TRILATERAL ARMS CONTROL REQUIRES ASYMMETRY

It is worth appreciating why symmetric nuclear arms control would not be attractive. If the goal is strategic stability, i.e., create a balance between arms control parties, then symmetric nuclear arms control would present two options to manage strategic forces, where the United States and Russia dominate over China. One would require Washington and Moscow to bring down their forces close to Chinese levels (and require Beijing to stop building up). In so doing, Washington and Moscow would have to reduce nuclear warheads and delivery systems, and address non-deployed forces, to eliminate the possibility that they could upload warheads on their launchers. This would require Washington and Moscow to make deep reductions – close to an eight-fold reduction in the

New START ceilings – and present a significant verification challenge, for non-deployed forces have never been subject to verification. The other option would be to allow Beijing to build its forces up or close to U.S. and Russian levels, and to allow it to deploy such forces – at present Beijing does not deploy its nuclear forces. This would involve allowing Beijing to do a massive build-up and require Washington and Moscow to maintain their current force levels.

Managing intermediate-range forces, which traditionally have included both nuclear and conventional ground-launched systems of a 500-5,000 km range, would present two similar options and be even more complicated to negotiate if the plan is symmetric nuclear arms control. Given that China dominates over the United States and Russia with intermediate-range forces, one option would require Beijing to eliminate its forces, or bring them down to U.S. and Russian levels if Washington and Moscow decided to build such systems now that INF-Treaty restrictions no longer apply. As would be the case for Washington and Moscow with regard to strategic forces, this would require Beijing to make deep reductions and present a major verification challenge. The other option would be to allow Washington and Moscow to build their intermediate-range forces up or close to Chinese levels, i.e., allow them to do a massive build-up, and it would require Beijing to maintain its current force levels.

Either way, there would be two extra requirements. First, the parallel elimination of, or tight restrictions on, U.S. and Russian sea-based cruise missiles. Understandably, Beijing would neither want to eliminate/reduce its intermediate grounded-based systems (which account for approximately 90 percent of its arsenal), nor allow Washington and Moscow to develop such systems without also including sea-based cruise missiles in the negotiations; note that air-launched cruise missiles are subject to New START counting rules. Washington and Moscow have large numbers of sea-based cruise missiles, which can be deployed on multiple platforms. That means the verification challenges would be immense, and, because most of these weapons are mobile, the verification regime would need to be global. Second, managing intermediate-range forces as described above would have to include simultaneous (or prior) action on strategic forces. Beijing, again, understandably, would probably not want to negotiate intermediate-range forces if U.S. and Russian strategic superiority endured.

This suggests the United States, Russia, and China would likely not be interested in symmetric nuclear arms control. U.S. allies, too, would find such a plan unacceptable and the disarmament community would not be pleased either

because, at least in some scenarios, this would create a strategic situation in which there are more nuclear weapons in the world.

More attractive would be to engage in asymmetric nuclear arms control. As one analyst has shown, asymmetric arms control, which she defines as "cooperative measures of self-restraint in which states make non-like-for-like exchanges, either quantitatively or qualitatively," is probably the best response to today's nuclear landscape, which is characterized by multipolarity and new weapons and technologies besides nuclear forces. It has relevance in a trilateral context.

To manage strategic forces in an asymmetric nuclear arms-control plan, the United States and Russia could be required to bring their forces down to a certain level (nuclear warheads, delivery systems, and non-deployed forces) in exchange for China pledging not to build its forces beyond that level, and not to deploy such forces. This arrangement would make clear that Beijing is not given a "green light" to build up to the new level reached by Washington and Moscow, but, rather, that it is prohibited to build beyond that level. The United States and Russia would verify their reductions in a regime à la START, and China would be required to engage in transparency measures that provide guarantees that it abides by its pledges; as the weaker power, however, China would be allowed to maintain a greater degree of opacity than the United States and Russia.

Similarly, to manage intermediate-range forces, China could be required to limit or bring down its forces to a certain level in exchange for the United States and Russia pledging not to go beyond that level and, at the same time, limiting or reducing their sea-based cruise missiles. Because they are at a disadvantage vis-à-vis Beijing when it comes to intermediate-range ground-launched forces, Washington and Moscow would be allowed to keep some of their sea-based systems. In this arrangement, the three countries would be subject to important verification and transparency measures. Also, this arrangement would require simultaneous (or prior) action on strategic forces because, again, Beijing would not want to negotiate on intermediate-range forces so long as Washington and Moscow maintain an advantage at the strategic level.

Such an asymmetric arms control plan could be spelled out in two formal treaties, with the one on strategic forces preceding the one on intermediate-range force for the reasons detailed above. Alternatively, there could be one single treaty that includes both strategic and intermediate-range forces, sets an equal ceiling for them, and lets the three countries decide the "mix" of forces

they deem necessary. Either way, such agreements would be challenging to negotiate, implement, and verify but could improve U.S., Russian, and Chinese security and strategic stability. They would also be more acceptable to U.S. allies and better received by the disarmament community because it would create a strategic situation in which there are fewer nuclear weapons in the world.

In parallel, a separate arrangement would have to be negotiated in a U.S.-Russia context, to address sub-strategic (tactical) nuclear weapons, which China does not have. Because there is a big disparity between the numbers of U.S. and Russian sub-strategic weapons (the United States is estimated to have 230 of such weapons and Russia 1,830) and because these weapons play different roles in U.S. and Russian security strategies (e.g., Moscow places considerable value in its larger arsenal to compensate for conventional inferiority vis-à-vis NATO), it would be difficult to conclude an agreement that reduces weapon numbers equitably and addresses the security void that these weapons fill.[51] An agreement that imposes an equal ceiling on each side's weapon numbers might appear equitable, but it would require deep reductions on Russian forces and few, if any, on U.S. forces. Similarly, an agreement that requires each side to reduce its forces by an equal percentage would demand greater reductions on Russia's part. Even if this issue is resolved, it is not clear which weapons would be involved because there are many different types, particularly on Russia's side, and most are dual-capable, complicating verification.

To address these issues, some have proposed limits that would cover all types of nuclear warheads: those deployed on strategic and sub-strategic forces, and those non-deployed.[52] This is ambitious, however, and it is not clear that such an agreement can be negotiated (or verified).

Assuming definitional issues can be addressed, there are asymmetric arms control options available. One would involve trading U.S. readiness to accept a limit on non-deployed strategic warheads, where Washington has a numerical advantage over Moscow, for Russian readiness to agree to a lower limit on sub-strategic weapons. Such an exchange could work, particularly given that most of Russia's sub-strategic arsenal appears to be non-deployed.[53] Another option would involve Washington and NATO capitals accepting Moscow's request that U.S. and Russian sub-strategic arsenals be placed deep into U.S. and Russian territories in exchange for bigger reductions by Russia. The price Washington and NATO agreeing to the removal of U.S. sub-strategic weapons from Europe would involve deep reductions by Russia.[54]

Both options would present verification challenges. Until a formal treaty can be concluded, however, transparency measures could be concluded, such as information exchanges about weapons numbers, their status, and their location. Involving China in some of these discussions would be worthwhile, particularly if the option of repatriating these weapons deep into national territories is considered, as Beijing would want to know where Russian weapons end up (if they are brought closer to Chinese territory). Moscow would want to reassure Beijing, too.

4.3 TRILATERAL ARMS CONTROL REQUIRES FLEXIBILITY

For trilateral arms control to work, the United States, Russia, and China would have to address several other issues, all of which require flexibility. Managing defensive systems tops the list because, as mentioned earlier, Russia has made clear that it will not conclude another arms control agreement unless there is some control over U.S. BMD systems. Given China's similar concerns about such systems, it is likely that Beijing, too, will demand some control. Both Russia and China fear not U.S. BMD systems as they exist right now, but what they could become. It is the open-ended nature of the U.S. program and Washington's rejection of any limits that are an issue. Moscow and Beijing are concerned that the program, now solely designed to negate the threats posed by the rogues, may later expand and negate their own second-strike capability; they are especially concerned because some in the United States have been calling for such a program expansion.

The basis of a compromise, therefore, is obvious: it would involve finding agreement on a threshold that distinguishes between the systems (and/or their numbers or speed) that can defend against rogue states, and those that have an impact on the Russian and Chinese deterrents and undermine strategic stability; recall that Washington has stated repeatedly that it does not want to undermine the strategic balance with Moscow and Beijing. If agreement on such a threshold can be found, the former systems would be authorized, and the latter prohibited.

Finding such an agreement would require the United States, Russia, and China to discuss data on BMD systems and conduct joint analyses on their capability to assess their impact, or the lack thereof, on strategic stability. The three countries could also conduct joint studies on the evolving capabilities of the rogues to build trilateral consensus on what is needed to defend against them. This would help build a foundation for trilateral BMD cooperation.[55]

Taking these steps would require flexibility on all sides. Washington would have to accept limits on its BMD program, and Moscow and Beijing that some U.S. BMD systems are tied to the evolution of the rogues' capabilities. That implies recognizing that pressure on strategic stability would increase if the rogues grow their capabilities because this would create incentives for BMD expansion. That would create a formal connection between strategic stability and nonproliferation. Managing new technologies and new domains is another critical component. Here too, because much remains unknown about their impact, the operating word is flexibility.

Discussions about strategic conventional weapons, notably hypersonic weapons, are important because these weapons will be more accurate than existing weapons and they will have unpredictable trajectories, presenting significant risks of inadvertent or unintentional escalation and, according to some, potentially emboldening its possessors to conduct a disarming first strike.[56] Discussing the impact of such technologies is especially appropriate in a trilateral context because, at present, only the United States, Russia, and China have such weapon programs.[57] These discussions could begin in strategic-stability talks, which could lead to technical exchanges and transparency measures, preparing for integration of such systems into treaties down the line. Per past practices, it would be possible to integrate these systems into START-like agreements: in New START, all warheads on intercontinental and submarine-launched ballistic missiles – nuclear and conventional – count under the warhead limit.

Trilateral discussions about the impact of the space and cyber domains are also paramount. Because space support systems have become critical to the combat potential of the U.S., Russian, and Chinese armed forces (and those of others), anti-satellite weapons have become attractive options. Yet some satellites serve to manage the U.S., Russian, and Chinese strategic deterrents and their disruption or, worse, their destruction could lead to escalation and nuclear use, especially in a crisis. Similarly, while it is difficult to gauge the impact of cyberattacks (because little is known about their potential), they, too, could lead to escalation to the nuclear level.

Trilateral engagement on space and cyber, therefore, is important. Washington, Moscow, and Beijing would benefit from jointly defining "rules of the road" to shape their behavior in such domains.[58] At present, it is difficult to imagine how these issues could be regulated in a formal treaty (or treaties) because we know little about the problems that they pose and because verification options are

not available. So, developing informal rules and norms appears more realistic, and that may also be the case for artificial intelligence, as some are beginning to unpack its potential impact on strategic stability.[59] For new technologies and new domains, the three countries should commit not to attacking one another's nuclear command-and-control systems. They should also work together to prevent third actors – states or non-state groups – from meddling with such systems to prevent their ability to cause a crisis or unwanted escalation during a crisis. This would require Washington, Moscow, and Beijing to establish a quick way to communicate. Such a hotline could later morph into a comprehensive trilateral crisis-management mechanism.

5. PROSPECTS FOR TRILATERAL ARMS CONTROL

If trilateral arms control is possible, its prospects appear bleak. At present, at least in the U.S.-Russia and U.S.-China dyads, the order of the day is competition, not cooperation. Even in the Russia-China dyad, where cooperation is flourishing, there is little interest in engaging in arms control because of latent competitive dynamics. Yet for arms control to work, competitors need to recognize that, while competition will continue, cooperation must be given space. As Hedley Bull, one the first arms control theorists, highlighted: "Arms control in its broadest sense comprises all those acts of military policy in which antagonistic states cooperate in the pursuit of common purposes even while they are struggling in the pursuit of conflictual ones."[60]

The United States, Russia, and China have not – and do not seem about to – come together to pursue "common purposes," either bilaterally or trilaterally. Doing so would involve more than stating an interest, as the Trump administration has done. It would involve designing a plan, which may be in the works in Washington but, for now, is nowhere to be seen.

Regardless, as suggested above, trilateral arms control would involve making tough decisions, particularly for the United States. It would require all three parties to acknowledge that they are – and commit to remaining – mutually vulnerable, even though they are not equally vulnerable. That mean the three countries would need to embrace deterrence – MAD – as the operating model for their relationships. Yet the United States has always reluctantly accepted deterrence; as one analyst has stressed, "Deterrence was never a well-loved concept in the United States."[61] This may be especially true today, where the focus of the Trump administration's national-security policy, anchored in "America First" ideology,

has been on enhancing the U.S. competitive edge. This leaves little room for negotiations, and for making compromises, with competitors, a requirement of arms control. Sometimes, it even seems that some only view arms control as a means to constrain Russia and China, not the United States. Consider Tom Cotton's recent tweet that "Future arms-control agreements must limit both Putin's massive tactical nuclear arsenal and Xi Jinping's growing nuclear ambitions. Anything less isn't real arms-control."[62] Of course, it is not clear either that Moscow or Beijing would be amendable to negotiations and compromises. While they have some specific requests (e.g., BMD restrictions or, for Beijing, formal U.S. acknowledgement of mutual vulnerability), for them progress can only be made if Washington becomes "more flexible" – a vague request that can be (conveniently) interpreted in multiple ways.

That said, it would be wrong to assume nothing can be done, or that it is best to wait "until the conditions are right." At no point were the conditions right when there were arms control breakthroughs in the past. Recall that the SALT/ABM-treaty negotiations proceeded in a less-than-ideal environment – they started after the Prague Spring of 1968 and concluded after the bombing of North Vietnam in 1972 – and initially had poor prospects. Similarly, INF-Treaty negotiations and the START process began after the Soviet-Afghan War, but advanced nonetheless and led to two landmark agreements few thought were possible at the time. Even when the U.S.-Russia relationship began to deteriorate from the late 1990s, despite arms control setbacks, Washington and Moscow concluded SORT and New START. Similar breakthroughs are possible, even if the goal is now three-way agreements with weapons and technologies besides just nuclear forces.

Moreover, there may be less daylight between the U.S., Russian, and Chinese positions than is often assumed. One analyst has argued that, for the first time, the 2018 NPR implicitly acknowledges Moscow and Beijing's long-held view that non-nuclear threats across domains, including BMD, are essential to strategic stability, which could present arms control opportunities.[63] Besides, for all the talk about Beijing's lack of incentive to accept trilateral arms control, some Chinese scholars have indicated that this would depend on what is expected of China and, presumably, what China would receive in return. As one such scholar has explained: "if the proposed trilateral negotiations are not about the number of weapons but strategic stability, China should get on board as soon as possible."[64] This suggests progress is possible.

6. CONCLUSION

One thing is certain: trilateral arms control will not happen overnight. It will take time, probably years, for U.S., Russian, and Chinese officials to negotiate viable agreements. This means work should begin now. Because they have experience, Washington and Moscow should jointly approach Beijing and opt, for instance, to share their practices of exchanging missile pre-launch notifications and flight-test telemetry data. Additionally, U.S. and Russian officials could invite their Chinese counterparts to observer U.S.-Russian on-site inspections. This would help build habits of trilateral cooperation before more substantive work can begin. Until then, Washington and Moscow should preserve the current arms control architecture, insofar as it remains relevant to manage today's realities. New START, which will expire in February 2021 but can be extended for an additional five years, fits that bill. From a U.S. perspective, extension should be a no-brainer: the treaty has helped enhance U.S. security and will capture two of Russia's new strategic systems, the Sarmat heavy intercontinental ballistic missile and the Avangard hypersonic glide vehicle.[65] That is why General John Hyten, Vice Chairman of the Joint Chiefs of Staff (and former commander of the U.S. Strategic Command), has said that he is "a big supporter of the New START agreement."[66] The good news is that Moscow has now indicated its willingness to extend it immediately and without preconditions.[67] The ball is now in Washington's court. The Trump administration should respond positively to Moscow's invitation and extend New START now, while at the same time launching a strong diplomatic push for trilateral arms control negotiations to begin shortly thereafter.

ACKNOWLEDGEMENTS

The author would like to thank Vincent Manzo for his comments on an early draft of this paper.

Endnotes

1 **Trump, Donald** (2018). Tweet from 3 December 2018, available at https://twitter.com/realdonaldtrump/status/1069584730880974849?lang=de (accessed 15 February 2020).

2 **The White House** (2019). Remarks by President Trump in State of the Union Address, Washington, DC, 6 February 2019, available at https://www.whitehouse.gov/briefings-statements/remarks-president-trump-state-union-address-2/ (accessed 15 February 2020).

3 **Reif, Kingston & Taheran, Shervin** (2019). U.S. Seeks Broader Nuclear Arms Pact. Arms Control Today, May 2019, available at https://www.armscontrol.org/act/2019-05/news/us-seeks-broader-nuclear-arms-pact (accessed 15 February 2020).

4 **Sonne, Paul & Hudson, John** (2019). Trump orders staff to prepare arms control push with Russia and China. Washington Post, 26 April 2019, available at https://www.washingtonpost.com/world/national-security/trump-orders-staff-to-prepare-arms-control-push-with-russia-and-china/2019/04/25/c7f05e04-6076-11e9-9412-daf3d2e67c6d_story.html (accessed 15 February 2020).

5 **Joseph, Robert & Edelman, Eric** (2019). New Directions in Arms Control. National Review, 29 April 2019, available at https://www.nationalreview.com/2019/04/arms-control-treaties-russian-chinese-nuclear-forces/ (accessed 15 February 2020).

6 **Cotton, Tom** (2019). Senators Cotton, Cornun, and Rep. Cheney Introduce New START Treaty Improvement Act, Press Release, 13 May 2019, available at https://www.cotton.senate.gov/?p=press_release&id=1121 (accessed 15 February 2020); **Thompson, Andrea & Trachtenberg, David** (2019). Hearing on The Future of Arms Control Post-Intermediate-Range Nuclear Forces Treaty, U.S. Senate Committee on Foreign Relations, 15 May 2019, available at https://www.foreign.senate.gov/hearings/the-future-of-arms-control-post-intermediate-range-nuclear-forces-treaty (accessed 15 February 2020).

7 **Holland, Steve & Alexander, David** (2019). Trump says he, Putin discussed nuclear deal that would reduce weapons. Reuters, 3 May 2019, available at https://www.reuters.com/article/us-usa-trump-russia-nuclear/trump-says-he-putin-discussed-nuclear-deal-that-would-reduce-weapons-idUSKCN1S91U1 (accessed 15 February 2020); **Ministry of Foreign Affairs, the People's Republic of China** (2019). Foreign Ministry Spokesperson Geng Shuang's Regular Press Conference, Beijing, 6 May 2019, available at https://www.fmprc.gov.cn/nanhai/eng/fyrbt_1/t1661163.htm (accessed 15 February 2020).

8 Beijing rejected trilateral arms control again on 16 May, 5 November, and 11 December 2019, see: **Ministry of Foreign Affairs, the People's Republic of China** (2019). Regular Press Conferences of the Chinese Ministry of Foreign Affairs, available at https://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/ (accessed 15 February 2020). Beijing had also rejected INF multilateralization on 5 December 2018, see: **Ministry of Foreign Affairs, the People's Republic of China** (2019). Foreign Ministry Spokesperson Geng Shuang's Regular Press Conference on December 5, 2018, available at https://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/t1619268.shtml (accessed 15 February 2020).

9 **Kristensen, Hans M. & Korda, Matt** (2019). Status of World Nuclear Forces. Federation of American Scientists, May 2019, available at https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/ (accessed 15 February 2020).

10 **Ford, Christopher** (2019). Remarks on The P5, the 'N5,' and the NPT Review Conference. Wilton Park Nonproliferation Conference, 16 December 2019.

11 **Johnson, Jenna & Troianovski, Anton** (2018). Trump congratulates Putin on his reelection, discusses U.S.-Russian 'arms race.' Washington Post, 20 March 2018, available at https://www.washingtonpost.com/world/trump-congratulates-putin-on-his-reelection-kremlin-says/2018/03/20/379effd0-2c57-11e8-8dc9-3b51e028b845_story.html (accessed 15 February 2020).

12 **Feinberg, Scott** (2017). Donald Trump Angled for Soviet Posting in the 1980s, Says Nobel Prize Winner (Exclusive). The Hollywood Reporter, 26 May 2017, available at https://www.hollywoodreporter.com/news/donald-trump-angled-soviet-posting-1980s-says-nobel-prize-winner-1006312 (accessed 15 February 2020).

13 **The White House** (2017). National Security Strategy of the United States of America (Washington, DC: White House, 2017), p. 25. Besides the NSS, the U.S. Department of Defense's National Defense Strategy and Nuclear Posture Review from 2018 and its Indo-Pacific Strategy Report from 2019 as well as the U.S. Department of State's "A Free and Open Indo-Pacific Report" from 2019, focus on competition with China.

14 **U.S. Department of Defense** (2018). Nuclear Posture Review (Washington, DC: Department of Defense, 2018), pp. 72-73; **Manzo, Vince** (2019). Nuclear Arms Control without a Treaty? Risks and Options after New START (Washington, DC: CNA, 2019), pp. 16-34.

15 There is a debate about whether NWS are legally required by the NPT to lead on disarmament. The matter was settled politically in 1995 when the NPT was extended indefinitely. The document "Principles and Objectives for Nuclear Non-Pproliferation and Disarmament" requires "the determined pursuit by the nuclear weapon states of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons, and by all states of general and complete disarmament under strict and effective international control." See: **United Nations** (1995). 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Principles and Objectives for Nuclear Non-Proliferation and Disarmament, NPT/CONF.1995/L.5, 9 May 1995.

16 U.S. efforts to prioritize Asia began in the 2000s with George W. Bush and crystalized with Barack Obama's "rebalance to Asia."

17 **Kravchenko, Stepan & Meyer, Henry** (2019). Russia Welcomes Trump Offer of New Nuclear Pact, Awaits Details. Bloomberg, 7 February 2019, available at https://www.bloomberg.com/news/articles/2019-02-07/russia-welcomes-trump-offer-of-new-nuclear-pact-awaits-details (accessed 15 February 2020).

18 **Hoell, Maximilian** (2019). The P5 Process: Ten Years On. European Leadership Network, 25 September 2019, available at https://www.europeanleadershipnetwork.org/policy-brief/the-p5-process-ten-years-on/ (accessed 15 February 2020).

19 **Arbatov, Alexey** (2017). Understanding the U.S.-Russia Nuclear Schism, Survival, 59(2): 33-66.

20 **Long, Austin and Green, Brendan** (2015). Stalking the Secure Second Strike: Intelligence, Counterforce, and Nuclear Strategy, Journal of Strategic Studies, 38(1-2): 38-73.

21 **Long, Austin** (2018). Russian Nuclear Forces and Prospects for Arms Control, Testimony presented before the House of Representatives Committee on Foreign Affairs, Subcommittee on Terrorism, Nonproliferation, and Trade, 21 June 2018, available at https://www.rand.org/pubs/testimonies/CT495.html (accessed 15 February 2020).

22 When signing the Treaty, the Russians issued a unilateral statement indicating that were U.S. BMD developments to threaten their strategic forces, Moscow would consider withdrawing.

23 **Roberts, Brad** (2015). The Case for U.S. Nuclear Weapons in the 21st Century (Stanford, CA: Stanford University Press, 2015), pp. 119-120.

24 Putin promised to "snap back hard" in a March 2014 address, see: **President of Russia** (2014). Address by President of the Russian Federation, 18 March 2014, available at http://en.kremlin.ru/events/president/news/20603 (accessed 15 February 2020). He unveiled Russia's new strategic weapons on March 2018: a long-range nuclear-powered and nuclear-armed autonomous underwater vehicle, the Status-6 or Poseidon, capable of striking coastal cities or other targets from transoceanic ranges, and an intercontinental-range nuclear-powered and nuclear-armed cruise missile, the Burvestnik, which will hold the U.S. homeland at risk.

25 These weapons include a low explosive yield option for submarine-launched ballistic missiles, and the restoration of nuclear, sea-launched cruise missiles. **U.S. Department of Defense** (2018), op. cit., pp. 52-55.

26 Russia's 2016 Foreign Policy Concept links arms control progress to including BMD, see: **The Ministry of Foreign Affairs of the Russian Federation** (2016). Foreign Policy Concept of the Russian Federation (approved by President of the Russian Federation Vladimir Putin on

November 30, 2016), available at https://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248 (accessed 15 February 2020). Putin also said that because of U.S. BMD developments "all agreements signed within the framework of New START are now gradually being devalued." **President of Russia** (2018). Presidential Address to the Federal Assembly, 1 March 2018, available at http://en.kremlin.ru/events/president/news/56957 (accessed 15 February 2020).

27 The Chinese arsenal was meant to be a national asset and a contribution to the socialist camp's collective deterrent capability. **Goldstein, Avery** (2000). Deterrence and Security in the 21st Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution (Stanford, CA: Stanford University Press, 2000), p. 111.

28 **Burr, William & Richelson, Jeffrey T.** (2000-2001). Whether to "Strangle the Baby in the Cradle": The United States and the Chinese Nuclear Program, 1960–64, 25(3): 54-99.

29 References to China's "self-defense nuclear strategy" first appeared in the 2006 Defense White Paper, see: **Ministry of National Defense, The People's Republic of China** (2006). China's National Defense in 2006, available at http://eng.mod.gov.cn/Database/WhitePapers/2006.htm (accessed 15 February 2020). After its first nuclear test, China declared: "The Chinese Government hereby solemnly declares that China will never at any time and under any circumstances be the first to use nuclear weapons." China's NFU commitment has been emphasized in all official documents since. Beijing has only focused on developing "the minimum means of reprisal," i.e., enough for a nuclear counterstrike. Quoted from **Lewis, Jeffrey** (2007). The Minimum Means of Reprisal: China's Search for Security in the Nuclear Age (Cambridge, MA: MIT Press, 2007).

30 The United States never embraced China without restraint. As it engaged, Washington was also hedging, see: **Friedberg, Aaron L.** (2018). Competing with China. Survival, 60(3): 7-64.

31 Ibid., p. 11.

32 **Mingfu, Liu** (2015). The China Dream: Great Power Thinking and Strategic Posture in the Post-American Era (Beijing: CN Time Books, 2015).

33 **Kristensen, Hans M. & Korda, Matt** (2019). Chinese Nuclear Forces, 2019. Bulletin of the Atomic Scientists, 75(4): 171-178.

34 **Wheeler, Michael O.** (2012). Nuclear Parity with China? (Washington, DC: IDA, 2012).

35 Until recently, nuclear dialogue was active at the track-1.5 level. Such dialogue was run by the Pacific Forum and Naval Postgraduate School on the U.S. side, and the China Foundation for International and Strategic Studies and China Arms Control and Disarmament Association on the Chinese side.

36 **Talmadge, Caitlin** (2019). The U.S.-China Nuclear Relationship: Why Competition Is Likely to Intensify (Washington, DC: Brookings Institution, 2019).

37 Interview by the author, Washington, DC, July 2019.

38 **Lo, Bobo** (2008). Axis of Convenience: Moscow, Beijing, and the New Geopolitics (Washington, DC: Brookings Institution, 2008).

39 **Goldstein** (2000), op. cit., pp. 71-76.

40 **President of Russia** (2019). Valdai Discussion Club session, available at http://en.kremlin.ru/events/president/news/61719 (accessed 15 February 2020).

41 **President of Russia** (2019). Joint Statement by the Russian Federation and the People's Republic of China on strengthening global strategic stability in the modern era, 5 June 2019, available at http://kremlin.ru/supplement/5412 (accessed 15 February 2020). [in Russian]

42 **The Military Doctrine of the Russian Federation** (2014). Approved by the President of the Russian Federation on December 25, 2014, No. Pr.-2976, available at https://rusemb.org.uk/press/2029 (accessed 15 February 2020).

43 **Arbatov, Alexey & Dvorkin, Vladimir** (2013). The Great Strategic Triangle (Moscow: Carnegie Moscow Center, 2013), pp. 12-13.

44 **Roberts, Brad** (2002). Tripolar Stability: The Future of Nuclear Relations Among the United States, Russia, and China (Washington, DC: IDA, 2002), pp. 38-42.

45 **Schelling, Thomas C. & Halperin, Morton H.** (1961). Strategy and Arms Control (New York: The Twentieth Century Fund, 1961).

46 **Colby, Elbridge A. & Gerson, Michael S.** (2013). Strategic Stability: Contending Interpretations (Washington, DC: SSI and U.S. Army War College Press, 2013).

47 There is a debate about whether first-strike stability means preventing nuclear first use to disarm an opponent or preventing any nuclear first use, including limited first use. The convention wisdom leans towards the former.

48 **Williams, Heather** (2019). Asymmetric Arms Control and Strategic Stability: Scenarios for Limiting Hypersonic Glide Vehicles, Journal of Strategic Studies, 42(6): 789-813.

49 After the Cold War, while some have redefined MAD to account for the changed realities, its key features have not changed.

50 **Kahn, Herman** (1960). On Thermonuclear War (Princeton, NJ: Princeton University Press, 1960), p. 537.

51 **Congressional Research Service** (2019). Nonstrategic Nuclear Weapons (Washington, DC: Congressional Research Service, 2019), pp. 37-42.

52 **Pifer, Steven** (2010). The Next Round: The United States and Nuclear Arms Reductions after New START (Washington, DC: Brookings Institution, 2010), p. 25.

53 Ibid., p. 23.

54 Ibid., p. 20.

55 To alleviate Russian concerns, Washington welcomed BMD cooperation in the NATO context. At the trilateral level, BMD cooperation could build upon these efforts.

56 **Acton, James M.** (2017). Entanglement: Russian and Chinese Perspectives on Non-Nuclear weapons and Nuclear Risks (Washington, DC: Carnegie Endowment for International Peace, 2017); **Acton, James M.** (2016). Russia and Strategic Conventional Weapons: Concerns and Responses, Nonproliferation Review, 22(2): 141-154; **Lieber, Keir & Press, Daryl G.** (2017). The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence, International Security, 41(4): 9-49.

57 **Congressional Research Service** (2019). Hypersonic Weapons: Background and Issues for Congress (Washington, DC: Congressional Research Service, 2019).

58 This effort has begun at the track-1.5 level. For the latest (published) draft of the memorandum on "Rules of the Road in Nuclear, Space, and Cyber Domains," see: **Cossa, Ralph A., Glosserman, Brad & Santoro, David** (2016). Reaching an Inflection Point? The Tenth China-U.S. Dialogue on Strategic Nuclear Dynamics, Issues & Insights, 16(20): C-1.

59 **Gasser, Paige, Loss, Rafael, Reddie, Andrew** (2018). Assessing the Strategic Effects of Artificial Intelligence (Livermore, CA: Center for Global Security Research, 2018); **Boulanin, Vincent** (2019). The Impact of Artificial Intelligence on Strategic Stability and Nuclear Risk (Stockholm: SIPRI, 2019); **Horowitz, Michael C., Scharre, Paul & Velez-Green, Alexander** (2019). A Stable Nuclear Future? The Impact on Autonomous Systems and Artificial Intelligence, 11 December 2019, arXiv:1912.05291, available at https://arxiv.org/abs/1912.05291 (accessed 15 February 2020).

60 **Bull, Hedley** (1965). The Control of the Arms Race (New York: Praeger, 1965), p. xiv.

61 **Long, Austin** (2008). Deterrence: From Cold War to Long War (Santa Monica, CA: RAND, 2008), p. vii.

62 **Cotton, Tom** (2019). Tweet from 6 December 2019, available at https://twitter.com/SenTomCotton/status/1202954273371443200 (accessed 15 February 2020).

63 **Williams, Heather** (2018). Strategic Stability, Uncertainty and the Future of Arms Control, Survival, 60(2): 45-54.

64 **Fan, Jishe** (2019). Trilateral Negotiations on Arms Control? Not Time Yet. China-U.S. Focus, 13 September 2019, available at https://www.chinausfocus.com/peace-security/trilateral-negotiations-on-arms-control-not-time-yet (accessed 15 February 2020).

65 Neither the Poseidon nor the Burvestnik are expected to become operational until after 2026 at the earliest, i.e., after an extended New START expires.

66 **U.S. House of Representatives** (2017). Statement of John E. Hyten, Commander United States Strategic Command Before the House Committee on Armed Services , Military Assessment of Nuclear Weapons Requirements, 8 March 2017, available at https://docs.house.gov/meetings/AS/AS00/20170308/105640/HHRG-115-AS00-Wstate-HytenUSAFJ-20170308.pdf (accessed 15 February 2020);
U.S. Strategic Command (2019). U.S. Senate Committee on Armed Services on March 1 2019, available at https://www.stratcom.mil/Media/Speeches/Article/1771903/us-strategic-command-and-us-northern-command-sasc-testimony/ (accessed 15 February 2020).

67 **Tass** (2019). Russia Ready to Include Avangard, Sarmat Systems in New START after its Extension. TASS, 22 December 2019, available at https://tass.com/defense/1102179 (accessed 15 February 2020).

Trilateral Nuclear Arms Control – A Russian Assessment

Alexey Arbatov

1. INTRODUCTION

For more than a decade since 2007, Russia had been insisting that the bilateral U.S.-Russian arms control model must be transformed into a multilateral one, in particular regarding the Intermediate-Range Nuclear Forces (INF) Treaty of 1987 and the follow-on to the Treaty on Measures of Further Reduction and Elimination of Strategic Offensive Arms (New START of 2010). This position was initially advanced by President Vladimir Putin in his famous 2007 Munich speech in relation to the INF Treaty[1] and later regarding the follow-on to New START. In 2012, Putin said: "We will not disarm unilaterally ... All nuclear powers should participate in this process. We cannot disarm while other nuclear powers are building up their arms."[2]

Until recently the U.S. position on this subject had been generally in favor (except about including Britain and France), but not too persistent. At some point, in 2007, the two states advanced a joint resolution in the United Nations in favor of making the INF Treaty multilateral,[3] but received no positive response.

With the unraveling crisis of arms control, the situation has now radically changed. Donald Trump's administration suddenly became a devoted partisan of multilateral nuclear arms control, while Vladimir Putin's government has taken a negative attitude towards this proposal. The U.S. withdrawal from the INF Treaty has been justified (besides the alleged Russian violations) by the necessity to counter China's medium-range missiles deployment and the need for China's participation in any possible new treaty on this subject. Likewise, Washington's reluctance to extend New START and the prospects of a follow-on agreement were linked to China's joining strategic arms limitations and reductions.

The Russian position, on the contrary, shifted to the long-standing position of all seven smaller nuclear-armed states: that the United States and Russia have to proceed in a bilateral mode since they possess the overwhelming portion of the nuclear weapons of the world. By taking this position, Moscow rendered full support to China's rejection of U.S. proposals to join any new version of the INF or START follow-on treaty. In September 2019, President Putin declared this

U-turn: “Now the U.S.A. has put forward a new version, they want to engage the Peoples Republic of China in this joint work. But Chinese are arguing quite reasonably that Chinese nuclear potential is much lower that than Russian or American and they do not understand what they should reduce if they already have fewer delivery vehicles and fewer warheads. This position looks sufficiently logical.”[4]

It is by no means clear whether the current shifts in U.S. or Russia’s arms control stances deserve a serious strategic analysis or are just declaratory tactics camouflaging motives of a different kind. Nevertheless, the problems of multilateral nuclear arms control will remain on the agenda of international security for the foreseeable future.

2. THE ASIA-PACIFIC STRATEGIC TRIANGLE

The great triangle of the Asia-Pacific region formed by the United States, Russia, and China is of particular importance, in economic, geopolitical, and military-strategic terms. Obviously, this triangle is not even-sided. On the one hand, Russia and the United States as well as the United States and China are being pulled deeper into geopolitical, military and economic confrontation. On the other hand, Russia and China are moving closer towards a political and military alliance – de-facto if not de-jure. In line with this trend, mutual nuclear deterrence relationships between Moscow and Washington, as well as between Washington and Beijing are getting more conspicuous, while the nature of nuclear relations between Moscow and Beijing, extremely tense until the late-1980s, is becoming increasingly mute.

This triangular relationship has an important regional dimension as well, in that other nuclear states (India, Pakistan, and North Korea) adjoin it in Asia. Besides, the great triangle is directly or indirectly involved in military, political, territorial, and economic relations and conflicts in the Western Pacific and Southeast Asia.

2.1 THE RUSSIAN-AMERICAN DIMENSION

The present crises in U.S.-Russian relations started earlier than the conflict in and around Ukraine in 2014. At its origins was Moscow’s dissatisfaction with the post-Cold War political order. This frustration for many years had been privately delivered to Western counterparts until publicly expressed in Putin’s Munich speech of 2007.[5] After Putin’s return to the Kremlin in 2012,

Moscow decided to stop talking and start acting to do away with the unequal model of relations with the United States by reasserting Russian traditional geopolitical spheres of influence and positions of military superpower. In response to Crimea in 2014, the United States and its allies imposed economic sanctions and revived the strategy of isolation, containment, and arms build-up against Moscow. This U-turn in Russian-Western relations in just a few years has drastically changed the relations of the previous thirty years and brought them to a highly dangerous state. In the realm of strategic interactions it is characterized by three trends in the spheres of arms control, weapons programs, and military doctrines.

First, in the arms control sphere the pivotal point came with the United States' and then Russia's withdrawal from the INF Treaty in August 2019. After Washington had denounced the Anti-Ballistic Missile (ABM) Treaty in 2002, the end of INF removed the second remaining cornerstone of the nuclear arms limitations and reductions regime, which was launched by the 1991 START-I Treaty. The collapse of INF happened against the background of an eight-year break in U.S.-Russian negotiations on any START follow-on agreement, which was the longest pause in fifty years of strategic arms talks. Although both parties fulfilled their reduction obligations under New START by the February 2018 deadline (though with a number of reservations from Russia), the Treaty will expire in February 2021. The chances for successful negotiations on a new agreement are quite bleak given the deep disagreements between the two parties on ballistic missile defenses and other important issues. Meanwhile, the U.S. administration up to now has been reluctant to extend New START until 2026, which, in line with Article XIV.2, can be done once for up to five years. In contrast, Russia is clearly in favor of extending the Treaty.

These developments would undoubtedly damage the global nuclear nonproliferation regime and undermine the 2020 Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). There are growing chances of a collapse of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), which was de-facto operational for twenty-three years, despite not having entered into legal force because of the refusal of the United States and a number of other nations to ratify it. The negotiations on a Fissile Material Cut-off Treaty (FMCT) and on the prohibition of space arms, which have been stalled for many years in Geneva, are dying a quiet death.

The main reason for this crisis is not the technical complexity of strategic relationships, or the turmoil in world order. The principle factor is a lack of appreciation for arms control as one of the highest national security priorities by the new generation of political and military elites on both sides.

Second, in terms of the number of warheads (14,500), the nuclear forces of Russia and the United States account for about 92 percent of the world's nuclear weapons stockpile.[6] On the other hand, during the last 30 years, starting with the INF and START-I Treaties, the strategic nuclear forces of both Russia and the United States have been consistently and deeply reduced: by about three times the number of deployed delivery vehicles and by 6 times the number of warheads.[7] Sub-strategic (tactical) nuclear arms have been cut even more drastically. In parallel, the pace of modernization of their forces had been going at an unprecedentedly slow and narrow pace until recently. During the same period, the nuclear capabilities of third countries (primarily of China, India, and Pakistan) have been growing steadily both in quantity and quality.

Due to the INF and START treaties of the last 30 years as well as reasonable modernization programs, Russia and the United States have maintained a classic relationship based on mutual nuclear deterrence and approximate strategic parity. Moreover, in line with the agreed principles of strategic stability, formalized in the U.S.-Soviet joint declaration of 1990, their nuclear balance has become highly robust at much lower levels of forces in a sense of "removing incentives for a first nuclear strike".[8]

Compared to the situation before START-I, the proportion of highly survivable weapons systems[9] increased from 30-40 percent to 60-70 percent. As a result, most realistic models of hypothetical nuclear exchanges demonstrate that neither side is able to destroy more than 50 percent of the strategic forces of the other, while expending 30 percent more warheads than the number destroyed.[10] Last but not least, the level of transparency and predictability has been unprecedented. While implementing New START, the parties exchanged about 300 on-sight inspections and 18,000 notifications about the state, activities, and changes to their strategic forces.[11]

Nonetheless, at present Russia and the United States are "smoothly" getting engaged in a new large-scale nuclear arms race cycle. This competition, unlike during the Cold War, will be augmented by rivalry in long-range precision-guided offensive and defensive conventional systems, conventional and nuclear medium-

range weapons, hypersonic missiles, as well as by a race in the development of space arms, autonomous drones with Artificial Intelligence (AI) capabilities, and cyber warfare assets.

In particular, a follow-on generation of strategic weapon systems was declared in the famous March 1, 2018, address by President Putin.[12] Russia is deploying the Avangard strategic boost-glide hypersonic system using old SS-19 ICBMs as a booster and the Kinzhal air-launched hypersonic intermediate-range missiles. The development and testing program includes further the new Sarmat heavy-type SS-30 ICBM, the Poseidon long-range nuclear torpedo, and the Burevestnik nuclear-powered intercontinental nuclear cruise missile.

This massive effort is justified as a response to the U.S. withdrawal from the ABM Treaty in 2002 and ensuing ballistic missile defense programs.[13] In particular, allegedly to assure defense penetration, Sarmat may fly to the continental United States across the southern polar circle, Avangard will follow a variable trajectory in the stratosphere, Poseidon will be able to go at a depth of 1,000 meters and explode near U.S. shores to create a giant tsunami-wave,[14] Burevestnik can indefinitely loiter in the air while choosing its target with the help of AI, and Kinzhal may instantly attack Aegis-ashore bases in Romania and Poland.

After the denunciation of the INF Treaty, and in line with the Soviet/Russian multiple systems tradition, land-based versions of the intermediate-range Kalibr-type cruise missiles, new intermediate-range ballistic missiles (IRBM) of the SS-26 Rubezh type, and hypersonic medium-range missiles may be deployed in response to future U.S. land-based intermediate-range missiles. According to some unofficial proposals, new IRBMs might even be deployed in Venezuela, Nicaragua, and Cuba.

All this is allegedly needed despite more than 2,000 presently deployed strategic nuclear weapons (by actual loading of heavy bombers) and almost 2,000 sub-strategic nuclear arms. Whether the above weapons program represents excessive nuclear posturing or a wise enhancement of deterrence, the accelerating pace of the bilateral arms race will most likely undermine strategic stability. This effect transcends through innovations of the military doctrines of the two superpowers.

Third, during the last decade there has been a tacit but profound transformation of U.S. and Russian nuclear postures that had emerged by the late 1980s.

Back then, leaders came to recognize that "nuclear war cannot be won and must never be fought".[15] Based on this understanding, the concept of strategic stability was elaborated as a state of strategic relationship, which removes incentives for a nuclear first strike.[16] Although never formalized, there emerged a shared understanding that any use of nuclear weapons, even if limited, would most probably escalate to global mutual annihilation. These ideas formed the foundation for a series of strategic reduction treaties during the 1990s and 2000s.

In contrast, current strategic thinking in the United States and Russia seems to be shifting. Now, the goal is to control nuclear escalation and to compel the opponent to capitulate or step back in an armed conflict.[17] The main novelty of the current U.S. nuclear strategy and weapons programs is the concept of a limited or selective nuclear war.[18] The concept originates in the 1960s when massive numbers of tactical nuclear arms had been deployed to Europe and Asia. From the early 1970s onwards, the United States promoted various options for selective and limited strikes against Soviet military targets,[19] but since the late 1980s this concept all but disappeared from official U.S. strategic documents. However, in the 2018 Nuclear Posture Review, the concept was again emphasized more forcefully than ever during the last thirty years:

"Recent Russian statements on this evolving nuclear weapons doctrine appear to lower the threshold for Moscow's first-use of nuclear weapons ... To address these types of challenges and preserve deterrence stability, the United States will enhance the flexibility and range of its tailored deterrence options".[20] This concept would rely on the whole panoply of sea-, air-, and possibly medium-range land-based nuclear and dual-purpose systems.[21]

Russia played with the very same idea in 2003, when an official document of the Ministry of Defense announced plans for the "de-escalation of aggression ... [by] the threat to deliver or by the actual delivery of strikes of various intensity using conventional and (or) nuclear weapons." As such, the document assumed the possibility of "dosed combat employment of selected components of the Strategic Deterrence Force".[22]

The current Russian Military Doctrine postulates: "The Russian Federation shall reserve the right to use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and/or its allies, as well as in the event of aggression against the Russian Federation with the use of conventional weapons when the very existence of the state is in jeopardy". The

purpose of a nuclear strike is defined as "the infliction of the assigned level of damage on an aggressor in any conditions".[23]

These formulas do not contain a formal concept of limited nuclear war, but do not exclude it either. It is not clear when and how exactly the "existence of the state" can be considered in jeopardy and what "level of damage" to the enemy might be interpreted as sufficient. However, it has been regularly discussed in professional military circles, including those associated with governmental institutions, which advocated "the limited nature of a first nuclear strike, which is designed not to harden, but rather to sober up an aggressor, to force it to halt its attack and move to negotiations".[24]

In terms of practical, in contrast to declaratory, nuclear planning, the Chief of the General Staff of the Armed Forces of Russia, General Valery Gerasimov remarked: "The policy of military threats from our Western 'partners' makes us respond to a threat with a threat and plan in perspective delivering strikes against the centers of decision-making and launchers for using cruise missiles against sites on Russian territory".[25] Apparently, this formula implies preemptive and selective strikes without specifying nuclear or conventional.

Nonetheless, in his March 1, 2018 speech, President Putin said: "Any use of nuclear weapons against Russia or its allies, weapons of small, medium or any yield at all, will be considered as a nuclear attack on this country. Retaliation will be immediate, with all the attendant consequences".[26] This might mean that, in contrast to the U.S. nuclear doctrine, limited nuclear war is not envisioned in the Russian doctrine. However, an unequivocal statement rejecting selective first nuclear use as its own strategy has never emanated from official Russian circles.

The history of the nuclear arms race and of nuclear doctrines shows that in many cases the Soviet Union, and later Russia, followed the U.S. example. No matter how much deterrence concepts are used to justify new capabilities, they actually lower the nuclear threshold and increase the likelihood of armed conflict between the superpowers escalating into a nuclear war.

Still worse, a serious discussion of delegating the decision to launch nuclear weapons based on AI is again underway, recalling the notorious "Dead Hand" concept from Soviet times.[27] From a moral, political, and strategic point of view, this might sound like the ultimate absurdity. Nonetheless, given the trends of

technological innovations and the propensity for nuclear war fighting in current strategic thinking, it is in no way impossible.

2.2 THE UNITED STATES AND CHINA

In contrast to its relations with Russia, the United States has never officially acknowledged mutual nuclear deterrence with China or accepted that China would eventually achieve parity with the United States. Apparently, Washington does not intend to offer such relations as a "gift" to China, the emerging superpower of the 21st century.

China, for its part, insists on its right for mutual deterrence with the United States, with an emphasis on what in the West is called "minimum nuclear deterrence". Beijing has been gradually increasing the number and survivability of its ICBMs and SLBMs, nuclear and precision-guided conventional intermediate- and short-range ballistic and cruise missiles.

Besides, China has the largest military shipbuilding (except aircraft carriers) and combat aircraft manufacturing (except heavy bombers) programs in the world. Its Air Force and naval aviation command about 4,000 aircraft of various types, including 700 of the newest models.[28] The Chinese Navy is the world's second largest after the United States and the largest in the Western Pacific possessing eight nuclear attack and 60 diesel submarines, 80 large combat surface ships, 50 large and medium-size amphibious ships and 90 small corvettes and missile boats.[29] China is increasing its anti-access/area-denial capabilities, which provide it with expanding sea- and air-control in the Western Pacific.[30]

In the nuclear realm, independent foreign experts estimate that as many as about 280 nuclear warheads are attributed to all legs and classes of China's nuclear forces.[31] During peacetime, most of these warheads would be stockpiled separately from the missiles. However, China has also adopted a continuous duty cycle for the DF-31/31A (CSS-10) ICBM missile brigades, clearly keeping these systems ready for immediate use upon the authorization of the Chinese political leadership. This means that the missiles in their launch containers will have permanently coupled nuclear warheads.

In contrast, reputable Russian experts have estimated that since the early 1960s China has generated 40 tons of enriched weapons-grade uranium and 10 tons of plutonium, which would be enough to produce 3,600 nuclear warheads.[32]

However, most likely half of this fissile material is being held in stocks and half of the 1,500–1,800 warheads that have been produced since then are in storage. Thus, up to 800–900 warheads and bombs could be available for operational deployment on delivery vehicles of various types.[33]

Foreign news agencies and independent experts have periodically reported that the Chinese military has been building an extensive system of underground tunnels. These tunnels, which extend for several thousand kilometers, could be capable of accommodating many dozens or even hundreds of backup ground-mobile launchers with ballistic and cruise missiles. No other purpose has yet been identified for such extensive earthworks.

American estimates forecast rapid growth of China's nuclear force during the next decade. According to Robert Ashley, Director of the U.S. Defense Intelligence Agency, "Over the next decade, China is likely to at least double the size of its nuclear stockpile in the course of implementing the most rapid expansion and diversification of its nuclear arsenal in China's history".[34] Depending on the starting point, this future nuclear force level might be between 600 and 1,800 warheads.

Even though such a high level is probably an exaggeration, the Chinese nuclear capability has probably been underestimated by the international strategic community. It appears that in all likelihood China has already the third largest nuclear weapons arsenal after the United States and Russia. In terms of its nuclear force level, and the technical and economic capability to build up its nuclear arsenal rapidly, it is possible that China surpasses all other nuclear weapons states combined, except the United States and Russia. Last but not least, China is the only nation of the five NPT nuclear weapons states and a permanent member of the UN Security Council which is totally opaque regarding any official data on its present nuclear forces and their development programs. In the past such reservation could have been justified on grounds of China's nuclear inferiority vis-à-vis the two nuclear superpowers and Beijing's vulnerability concerns. Nowadays, however, such posturing looks threatening to China's neighbors, in particular since Chinese doctrinal documents contain rather harsh official statements reflecting its rising military power and expanding geopolitical ambitions.[35]

China's official nuclear doctrine, coupled with total secrecy regarding its nuclear forces, probably has little to do with practical policy, but represents a massive

propaganda effort, much like that of the Soviet Union from the 1960s until the late 1980s. For strategic professionals, studying American nuclear posture documents is an interesting job. Reading Russian military doctrines requires a lot of patience. But exploring Chinese defense statements is an agonizing experience indeed. The 2019 White Paper underlines the fundamental principle of its defense policy: "To strengthen China's national defense and military in the new era, it is imperative to comprehensively implement Xi Jinping's thinking on strengthening the military, thoroughly deliver on Xi Jinping's thinking on military strategy".[36] Accordingly, the Paper defines China's military doctrine, which "adheres to the principles of defense, self-defense and post-strike response, and adopts active defense". It highlights that "we will not attack unless we are attacked, but we will surely counterattack if attacked."[37] It further declares: "China is always committed to a nuclear policy of no first use of nuclear weapons at any time and under any circumstances, and not using or threatening to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones unconditionally ... China does not engage in any nuclear arms race with any other country and keeps its nuclear capabilities at the minimum level required for national security."[38]

Nonetheless, the situation with China is much more contradictory, than its doctrine of nuclear No First Use would portray. It is commonly believed that a nuclear power that makes a nuclear no first use pledge should rely on a second-strike capability. However, according to information available abroad, China's deployed nuclear forces are too small and vulnerable (about 148 ICBMs and SLBMs with a little more than 150 nuclear warheads and 96 nuclear IRBMs)[39] to be able to launch a retaliatory strike after a hypothetical disarming missile attack by the United States employing many hundreds of nuclear warheads and thousands of conventional precision-guided weapons. Besides, China's strategic nuclear forces would be incapable of launch-on-warning operations due to insufficient combat readiness of missiles, their vulnerability, and an inadequate effectiveness of the Chinese early warning and C3I systems. Beijing works to improve its forces and C3I capabilities, but its progress is not impressive. At the same time, its No First Use doctrine stands since many decades. In fact, the Chinese second-strike capability would be viable only if a large number of nuclear weapons are stored in the underground tunnels, ensuring that this additional stockpile is highly survivable and unknown to a potential adversary. This stockpile would not be available for immediate use but might be launched as a delayed retaliation.

After abrogation of the INF Treaty, the United States is contemplating development and deployment of intermediate-range cruise missiles, ballistic, and (or) boost-glide hypersonic arms in the Western Pacific. Washington's official position is that, "We will not stand idle. We will take the necessary steps to ensure our security and that of our allies and partners. And that includes testing and developing systems to respond to the challenges we face ...".[40]

According to American experts, China's theater-range missiles undermine the credibility of American extended deterrence protecting allies and partners. In times of crisis, the vulnerability of high-value, forward-deployed forces, including aircraft on the ground and ships in port, to a devastating strike could compel the United States to relocate military units to areas beyond the reach of Chinese missiles. Anti-ship versions of such missiles can hit U.S. aircraft carriers and ships equipped with SLCMs and Aegis missile defense systems; thus, forcing them to stay out of range.[41] If forward bases were rendered either unusable or inaccessible, the United States would be compelled to fall back on Hawaii or Australia, thousands of kilometers from the frontlines.[42]

Allegedly, that is why the United States considers a number of possible military countermeasures previously forbidden under the INF Treaty. The primary missile systems considered for deployment are the ballistic Precision Strike Missile (PrSM) with a range of 700 km and/or a ground-launched cruise missile on the basis of the Tomahawk BGM-109G with a range of 1,000 km.[43] Both systems are expected to be armed with conventional warheads. In view of the distances between possible basing areas and mainland China or North Korea, another project may involve a ground-launched intermediate-range ballistic missile with trajectory shaping vehicles (TSVs) possessing a maneuvering capacity to hone in precisely on a target. An alternative system may be a boost-glide IRBM,[44] presently called the Long Range Hypersonic Weapon (LRHW). Its range is expected to be 4,000-6,800 km and it could be ready for deployment in 2023 or 2024.[45]

According to proponents of such systems, they have serious advantages compared to existing sea- or air-launched analogues. First, aircraft, ships, and submarines are much more expensive platforms than ground-based missile launchers. Second, in contrast to air and naval platforms, which require time to reach their firing positions, forward-deployed ground-launched missiles could constantly hold enemy targets at risk from where they are stationed. With short flight times, they would be able to attack mobile units and high-priority targets.

Third, ground-launched theater missiles are difficult to find and to attack, for they can use camouflage techniques against air and space reconnaissance and be protected by air and missile defense systems. Fourth, ground-based missile batteries have logistical demands but do not require specialized facilities that aircraft and naval vessels need to rearm and refuel. Sixth, a modestly sized land-based missile force could destroy parts of enemy air defenses, thereby opening the way for heavy bombers and fighter-bombers to attack their targets.[46]

From a military point of view, planning large-scale conventional war with China – one that would not quickly escalate to the nuclear level – is a highly dubious proposition even if, as always, framed in the theology of extended deterrence. As recognized in the U.S. 2018 Nuclear Posture Review: "China is developing capabilities to counter U.S. power projection operations in the region and to deny the United States the capability and freedom of action to protect U.S., allied, and partner interests. Direct military conflict between China and the United States would have the potential for nuclear escalation."[47]

The main problem for Washington would be finding bases for the deployment of a sufficient number of ground-launched missiles. Ideally, they would be deployed in Japan (including Okinawa), South Korea, Taiwan, the Philippines, and in Australia. However, for domestic political and foreign policy reasons, this is unlikely to be welcomed by either of these countries. Also, Australia is too far away at 4,000 to 5,500 km, while Taiwan and South Korea are too close (50-130 km) and thus militarily highly provocative as a missile basing area. Thus, the only assured basing location would be Guam, an American island territory in the Western Pacific 50 km long and 12 km wide.

If the United States plans to counter the 2,000 intermediate- and short-range missiles, which are ascribed to China, how many missile launchers may be physically deployed on this small territory to gain all the above advantages without presenting a densely packed lucrative target for a preemptive Chinese massive missile attack with conventional munitions (to say nothing of nuclear warheads)? A few dozen or a hundred?

A harsh reaction to this deployment in the form of missiles build-up would not only come from China, but from Russia as well, if it is within reach of U.S. missiles. Moscow would feel justified to target American missile bases as well. Suggested Russian deployment areas in Asia include the South Kuril Islands, Maritime province and Chukotka.[48] The latter is the only place from where

Russian IRBMs can reach American strategic targets in Alaska and California. This may create a somewhat similar threat to the U.S. homeland as compared to American intermediate-range missiles deployed in Europe and Asia with regards to Russia.

America and China clearly have a relationship based on mutual nuclear deterrence. However, the nuclear balance is still heavily asymmetric in favor of the United States with respect to the quantitative and qualitative parameters of strategic nuclear forces and ballistic missile defenses, as well as C3I systems. Consequently, there is no parity in the strategic balance of the two states and also no formally recognized state of mutual assured destruction, which served as the basis of U.S.-Russian strategic stability and arms control talks.

The United States might be able to destroy 90 percent of China's identified strategic and sub-strategic nuclear forces in a hypothetical disarming (counterforce) strike.[49] The missile defense system that is being deployed and enhanced in Asia and the Pacific by the United States and its allies might be capable of intercepting some of the surviving Chinese nuclear missiles. Still, American losses after a Chinese nuclear retaliation against American cities (countervalue strike) could be in the millions.

Washington's response to such a contingency is analogous to its strategy in a hypothetical conflict with Russia, but in contrast to that, is implicitly relying on U.S. nuclear superiority: "Our tailored strategy for China is designed to prevent Beijing from mistakenly concluding that it could secure an advantage through the limited use of its theater nuclear capabilities or that any use of nuclear weapons, however limited, is acceptable. The United States will maintain the capability to credibly threaten intolerable damage ... such that the costs incurred as a result of Chinese nuclear employment, at any level of escalation, would vastly outweigh any benefit." [50]

The fact that China is building up its nuclear forces establishes a significant, though unspoken, incentive for the United States and its allies to develop a missile defense system in East Asia. Although the immediate justification of this system is to intercept North Korean missiles, Washington quite probably seeks to deploy a BMD system in the region to obstruct and delay China's acquisition of a robust nuclear deterrent potential (not to mention strategic parity with Washington) with a guaranteed capability for retaliation. For obvious reasons, China has been even more concerned about these developments than Russia

has been worried about NATO's BMD system. China's response is to develop a C3I complex, BMD penetration aids, hypersonic and anti-satellite systems, and its own air and missile defenses.

U.S. offensive conventional weapons are also a source of major concern in China, especially with regard to precision-guided sea- and air-based cruise missiles combined with space-based reconnaissance, targeting, and communication systems. The prospects of hypersonic high-precision conventional boost-glide systems cause even larger concern for China. The Chinese are also worried about the U.S. experiments with the secret X-37B spacecraft that took place in April 2010.

The likelihood of a U.S. counterforce attack using precision-guided conventional weapons undercuts China's sacramental nuclear doctrine based on an unconditional commitment not to use nuclear weapons first, to which it attaches great political importance. If Beijing makes an exception for the case of an attack against its nuclear forces with conventional weapons, then, in essence, the Chinese nuclear doctrine would not be different from that of Russia or a number of other states, and it would lose its unique political advantage.

2.3 RUSSIA AND CHINA

There are three principle drivers pushing Russia and China towards ever-closer cooperation. One is that both have economic and security interests in cooperation within a bilateral context, being close historic neighbors with a long and highly controversial history and a 4,500 km common border. A new confrontation (to say nothing of armed conflict) would be extremely detrimental for both sides. The second is that they are presently opposing U.S. leadership in the Euro-Atlantic and Asia-Pacific trans-regions and both are expanding their influence against the West in the Middle East, Africa and Latin America. The third motive is the nature of their national political systems. They are not in any sense embarrassing each other, but are clearly distinct from the Western liberal democracies, which are perceived as an imminent threat in Moscow and Beijing. True, the same was the case in the 1960-1980s, when the two neighboring nations had been the worst enemies in the world. But at that time they were bitter rivals for the leadership in the communist world while China was struggling to get out of the former subjugation to the USSR. At present, there is no communist world while both states are striving for stronger positions in their respective relations with the West.

Sino-Russian strategic relations have been more controversial and ill-defined than between the United States and China or between Russia and the United States. Officially, neither of these two "strategic partners" recognizes mutual nuclear deterrence in their strategic relations. At the same time, they are not formal allies and apparently do not cooperate on nuclear weapons operations or development. The much recognized joint patrol of Russian and Chinese bombers in East Asia in July 2019 was a purely symbolic demonstration to impress the Americans and their allies.[51]

On October 3, 2019, Vladimir Putin emphasized the "unprecedented level of mutual trust and cooperation in an allied relationship of strategic partnership" and disclosed an agreement with China on helping it to build an early-warning system.[52] Reportedly, the $60 million contract aims to develop only the software for a future Chinese system. As of now, there are no plans to cooperate in developing and deploying hardware or to share data from Russian early-warning satellites and land-based radars. In principle, this cooperation could enhance strategic stability. Given its growing nuclear arsenal, it would be dangerous if China would stay "deaf and blind."

Still, this step goes beyond previous cooperation on sales of weapons and civil nuclear technologies. Joint early-warning systems can only exist among close military allies like is the case between the United States and some of its NATO allies (Great Britain and Denmark). If such cooperation between Russia and China were to expand, it would imply a tectonic shift in the regional and global balance of power. The worst possible consequence would be if China were to rely on such a system to adopt launch-on-warning as a version of its own No First Use commitment. The probability of inadvertent nuclear war due to false alarm or a technical glitch would grow exponentially were all three great nuclear powers to implement such strategy.

A cooperative early-warning complex just as a joint BMD system is incompatible with mutual nuclear deterrence, which probably will remain in a latent form in Russia-China strategic relations. Possibly some parts of Russia's strategic nuclear forces, as well as some of its sub-strategic nuclear weapons, may be assigned to a deterrence mission vis-à-vis China. Interestingly enough in the context of Russia's criticism of the INF Treaty during the years 2007-2018, China had been mentioned together with a number of other non-INF nations possessing intermediate-range missiles. After the abrogation of the Treaty, Russia apparently intends to deploy nuclear and conventional IRBMs in Siberia and the Far East in

response to possible U.S. deployments in the Western Pacific. Simultaneously, those future missiles would be technically capable of targeting many Chinese military and civilian sites. This might be tacitly seen as an asset by the Russian military and, at the same time, as a liability for their Chinese "strategic partners."

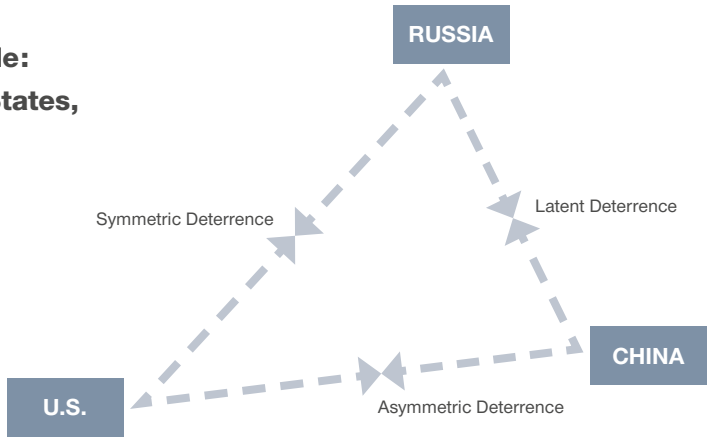
Most probably, a part of China's strategic and medium-range nuclear forces also target Russian urban-industrial centers. Nonetheless, Russia retains a significant superiority over China in strategic and tactical nuclear weapons, which will continue for the foreseeable future.

Even though mutual nuclear deterrence has taken somewhat of a backseat in light of closer political relations between the two powers, Russia, similarly to the United States, has never recognized the Chinese claim of strategic parity or mutual nuclear deterrence. In any case, considering the political and strategic aspects of their relations, Russia and China have even less of a sound basis for initiating mutual nuclear arms limitation talks between them than the United States and China.

Nonetheless, Russia should have an interest in limiting China's strategic and sub-strategic nuclear and conventional systems. Whatever the political relations of the two neighbors in the future, Russia's conventional inferiority in the East will probably grow more worrying for Moscow.

Taken together, strategic relations between the three great powers are asymmetrical and lack any political or strategic common ground in terms of strategic stability and parity. The "triangle" is unequally sided and qualitatively irregular (Figure 1).

Figure 1.
The strategic triangle: Russia, the United States, and China.



3. PROSPECTS FOR NUCLEAR ARMS LIMITATIONS

However inferior in nuclear forces in comparison to the United States and Russia, at present, China is the only country that has the economic and technical capability to implement a multifold buildup of its strategic potential over the course of the next ten to fifteen years. Only by replacing single-warhead missiles with MIRVed systems China could increase the total number of warheads by two to three or even more times. This is what happened with the U.S. strategic forces during the first half of the 1970s and the Soviet Union's strategic forces in the second half of the same decade. Hence, it is worthwhile to take Chinese forces and development programs into consideration when discussing any future Russian-American strategic or intermediate-range arms limitation agreements.

China officially opposes any attempt to make an issue out of China on arms control and will not participate in any negotiation for a trilateral nuclear disarmament agreement."[53] However, that position might change. In May 2019, its stance was a flat rejection: "The premise and basis for trilateral arms control negotiations do not exist at all and *China will never participate* in them [emphasis added by the author]."[54] This rejection became less categorical in July 2019, after the abrogation of the INF Treaty: "Right now we do not see any conditions or basis for China to join the negotiation between the U.S. and Russia."[55]

Most likely, China's opaque stance is motivated by a desire not to reveal the actual size of its nuclear arsenal, which may be much larger than usually estimated. Besides, Beijing's foreign and defense policy, underlying its arms control stance, is obviously determined by an extremely conservative, cautious, and inflexible bureaucratic apparatus, dominated by the party, the military, and the industry. This apparatus remains unchallenged at home and abroad. But in time it may seem worthwhile for China to rethink its stance in order to enhance its global status and its deterrence potential, as well as to oblige the United States to treat China as an equal in potential arms control talks.

Two essential preconditions would have to be met to achieve some arms control progress. First, China would have to see that joining the arms control process promises substantive strategic gains through trading-off concessions on arms limitation with other states. Nothing like that was ever offered to China besides general calls to join arms control. Second, any future agreement must not legalize China's strategic inferiority vis-à-vis the two superpowers. These preconditions should then define what weapons systems should be subject to negotiations.

The logic of mutual deterrence would first call for bilateral U.S.-Chinese diplomatic engagement. However, due to the trilateral geostrategic situation and the range of IRBMs (to say nothing of strategic weapons), America, and, perhaps clandestinely, also China would hardly agree on any arms limitations were Russia not part of such a deal. Anyway, a U.S.-China agreement without Russia is less likely than a future Russian-U.S. deal excluding China.

Finally, when discussing possible further arms control agreements on various classes of offensive systems, a time frame of ten to fifteen years should be taken into consideration. Over this period, China would be able not only to increase the number of its nuclear launchers but also to replace its single-warhead missiles with MIRVed missiles currently under development (DF-31AG, DF-41, and JL-3), with hypersonic arms, advanced heavy bombers, and long-range cruise missiles of various basing modes.

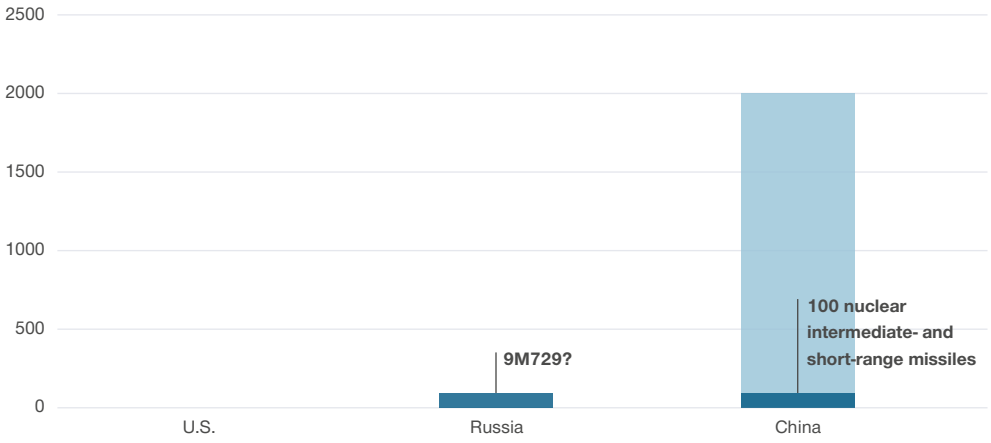
China possesses about 100 nuclear-tipped ground-launched missiles of the types prohibited by the late INF Treaty.[56] In addition, China allegedly possesses up to 2,000 high-precision medium- and short-range conventional missiles, capable of striking U.S. aircraft carriers and sites in Japan, South Korea, Taiwan, and Guam.[57] Most likely, many of those missiles are short-range systems with less than 500 km range, deployed against Taiwan and other nearby zones bordering China. Still, these missiles are a major concern for Washington.

Half a century of U.S.-Soviet/Russian arms control experience demonstrates that no party would agree to legalize its inferiority and, at the same time, its opponent's superiority. Therefore, negotiations should aim at setting equal ceilings for comparable weapons systems. Justifying its withdrawal from the INF Treaty, Washington is pointing at the perceived threat of 2,000 Chinese intermediate and short-range missiles, most of which are conventionally armed. Simultaneously, the United States is officially proclaiming its intention to deploy non-nuclear intermediate-range ballistic and cruise missiles in East Asia.[58]

This means that any hypothetical new arms control treaty should cover both nuclear and non-nuclear ground-launched missiles of corresponding range. Parity based on the current number of China's ground-launched intermediate and short-range missiles would imply China's agreeing to limit its existing systems in exchange for the United States' and Russia's right to deploy 2,000 such weapons. If instead missiles are limited at a much lower level or even entirely prohibited, then, China would lose a lot in exchange for nothing. There

is no chance that China would accept such a deal, especially in light of the overwhelming advantage of the two other states in strategic weapons. Hence, the balance of land-based intermediate or short-range missiles (Figure 2) does not provide a promising starting point for arms control except under the unrealistic scenario of the United States and Russia quickly deploying many hundreds or thousands of such missiles while China refrains from responding.

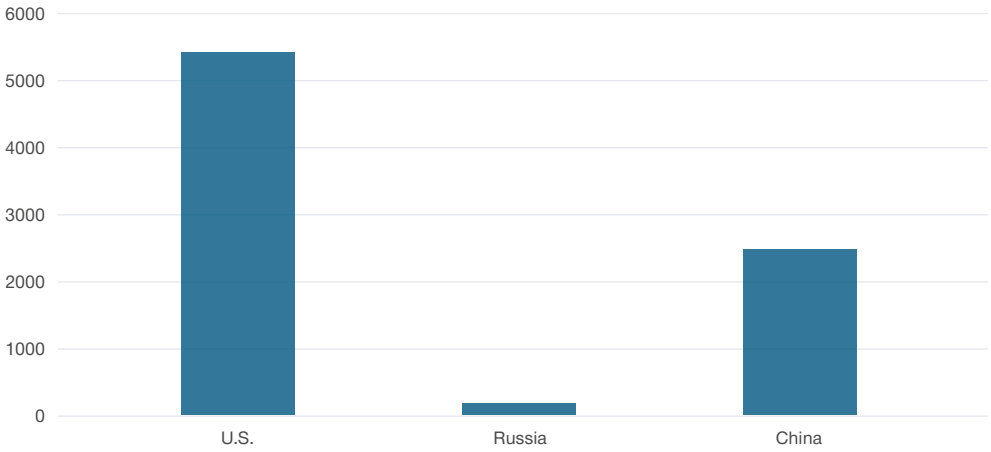
Figure 2. The balance of ground-launched intermediate and short-range missiles.



Source: SPIRI Yearbook 2018: Arms, Disarmament and International Security; Remarks at a UN Security Council Briefing on Threads to International Peace and Security. 22 August 2019, New York City.

Hypothetically, if China departs from its current negative stance, it would most likely want the overall ceiling for such missiles to include both ground and sea-launched cruise missiles. Air-launched cruise missiles might also be included in China's bargaining position.[59] The United States has about 5,400 cruise missiles on all of its fleets,[60] and Russia probably possesses a few hundreds of them as well (according to official reports, it has recently increased its cruise missile arsenal thirty-fold).[61] Verifying the total number of such missiles (Figure 3) would present an enormous challenge. They are deployed in ships' universal missile launchers along with anti-aircraft, anti-missile, anti-ship/land-attack, and anti-submarine missiles, and on refitted strategic submarines, as well as in attack submarines' vertical launchers or torpedo tubes. Unlike ground-launched intermediate-range missiles, the deployment of mobile sea-launched systems is not restricted to a particular region. That means that China would most likely insist on global ceilings.

Figure 3. The balance of ground- and sea-launched cruise and ballistic intermediate- and short-range missiles.

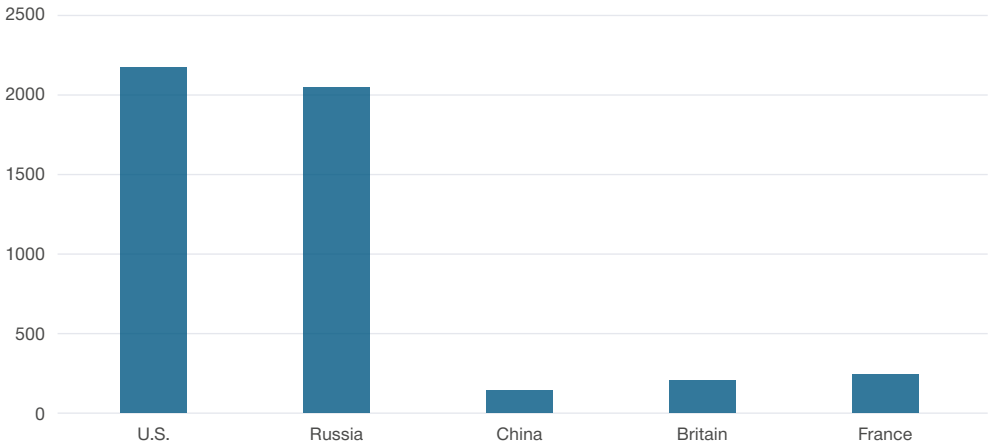


Source: SPIRI Yearbook 2018: Arms, Disarmament and International Security; Remarks at a UN Security Council Briefing on Threads to International Peace and Security. 22 August 2019, New York City.

The hypothetical Chinese negotiation position outlined above would be quite reasonable from an arms control point of view, and would put the United States – and to some degree, Russia – in an extremely awkward position. Even if negotiations would end with no result, China would still score a political victory simply by the fact that no one could blame the Chinese for their more comprehensive but quite logical position. Successful negotiations, however, would be a big strategic victory for China due to the global limits on both land- and sea-based missiles of an appropriate range of all three parties.

Chinese participation in the next START treaty, which the White House is also talking about, could create even greater problems for the two superpowers. For instance, China could ask for parity in strategic weapons at its current levels, which would require a seven to ten-fold reduction in the New START ceilings on delivery vehicles and warheads. Alternatively, it could insist on its right to increase its strategic weapons up to the present U.S. and Russian numbers. Neither of the two options would be acceptable to Washington or Moscow, even if a long-standing Russian demand of applying limitations on British and French nuclear forces were satisfied in contrast to the traditional positions of those three NATO allies (Figure 4).

Figure 4. Pentagonal strategic balance.

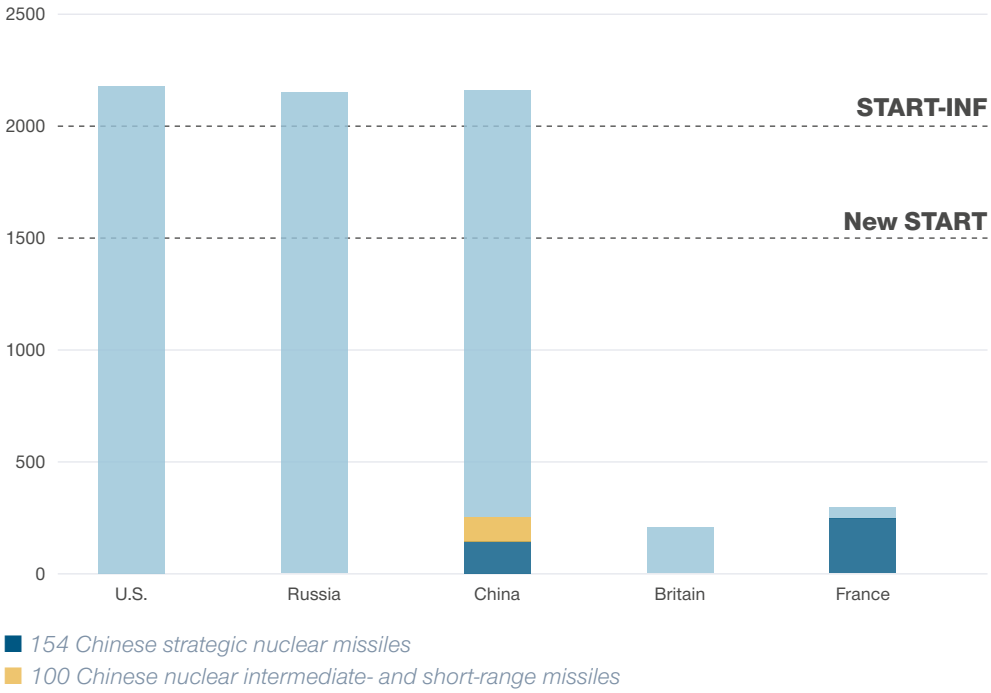


Source: SPIRI Yearbook 2018: Arms, Disarmament and International Security

Nonetheless, theoretically a compromise is possible. For instance, the next START treaty could be a trilateral agreement with the current ceiling for deployed weapons. According to New START, this ceiling is at 1,550 warheads, but taking into account the actual available cruise missile and gravity bomb load on heavy bombers, it is in fact around 2,100-2,200 weapons. Hypothetically, the next agreement could set a 2,000 warheads ceiling for strategic land- and sea-based ballistic missiles, gravity bombs and air-launched cruise missiles, as well as land-based intermediate and short-range ballistic and cruise missiles. It could also include present and future boost-glide intercontinental and medium-range systems, intercontinental cruise missiles and long-range underwater autonomous vehicles.

All the above systems would be limited if they have ranges in excess of 500 km and regardless of whether their warheads are nuclear or conventional. That would also include the U.S. air-launched AGM-158, the JASSEM-ER, and future X-51 WaveRider missiles as well as the Russian Kh-555, Kh-101, and Kinzhal (if fitted onto aircraft that qualify as heavy bombers). Also included would be future U.S. and Russian land-based intermediate-range missiles. The number of the respective conventional systems is difficult to calculate because it changes all the time (partly because they are employed in local conflicts). In Figure 5, they are nevertheless included in both the total number of present warheads on strategic and intermediate range delivery vehicles and in the ceiling of a hypothetical future trilateral treaty.

Figure 5. Hypothetical integrated INF-START Treaty.



Source: SPIRI Yearbook 2018: Arms, Disarmament and International Security; Remarks at a UN Security Council Briefing on Threads to International Peace and Security. 22 August 2019, New York City.

Under such a treaty China would be allowed to increase its strategic forces (currently around 150 delivery vehicles and warheads), while it would have to reduce its intermediate-range systems that worry the United States. For their part, the two nuclear superpowers would have some latitude in deploying intermediate and short-range missiles, depending on corresponding reductions in their strategic systems. All three parties would thus have sufficient flexibility in planning the mix of their strategic and intermediate- and short-range forces, as well as their nuclear and conventional systems of appropriate range. To prevent a rapid build-up of Chinese strategic arms, a sub-ceiling of 500-600 on strategic delivery vehicles (missiles and bombers) and some other structural and qualitative limitations might additionally be introduced. Verifying such an agreement would not be more difficult than verifying the INF and START Treaties, provided new definitions are agreed on for hypersonic and other novel arms.

Sea-launched cruise missiles present a more serious challenge due to the mobility of their delivery vehicles and the universality of their launchers, but the initial solution may be to extend confidence-building measures to these

missiles, regardless of the class of warheads they carry. These measures could include specific notifications about certain operations of cruise missile ships and submarines. This might alleviate fears of a sudden cruise missile strike from the sea and prevent potentially disproportionate reactions.

A hypothetical treaty would benefit China through recognition of its equal status of a nuclear superpower, its right to rely on stable mutual nuclear deterrence with the other two nations, and by the economic benefits of avoiding an arms race. America and Russia might gain limitations, transparency, and predictability regarding the Chinese missile build-up in exchange for recognizing China's equal nuclear status and in exchange for additional mutual strategic limitations.

From a nuclear disarmament standpoint, all that would seem like a step backwards. Raising warheads ceilings to 2,000 from zero under the deceased INF Treaty and from 1,550 under New START would require a lot of explaining in the UN, including convincing others of the advantage of having more realistic counting rules for bomber weapons. But it would still be better than a world without INF, and, perhaps, New START.

Expanding the nuclear arms control format is hard, but hypothetically possible. However, advocates of a trilateral process need to realize that it requires more than simply revising the current positions of third nuclear states. The two nuclear superpowers would pay a much higher price in that case – both in terms of force limitations, military strategy and politically.

4. CONCLUSION

So far, the idea of multilateral (and in particular trilateral) nuclear arms control has generated nothing constructive. To the contrary, due to its deceptive simplicity, politicians, and the public in general, easily accept it and do not object to the termination of the bilateral arms control process.

Meanwhile, Moscow and Washington face a number of serious issues that should be the subject of arms control negotiations. After the abandonment of the INF Treaty, the two states should at least commit to not deploy INF-prohibited missiles in Europe and, no less important, agree on appropriate transparency measures. Next, they should extend New START for a five-year period and immediately start discussing a follow-on agreement. Further reductions in numerical levels are secondary. Far more important is that the next treaty includes limits on the

newest nuclear and conventional strategic weapons systems and adopts realistic counting rules (particularly on bomber weapons) and a strict verification regime. Only the continuation of bilateral U.S.-Russian nuclear arms control can serve as the political and military basis for eventually shifting to a tri- or multilateral nuclear arms control format.

Endnotes

1 **President of Russia** (2007). Speech and the Following Discussion at the Munich Conference on Security Policy, 10 February 2007, available at http://en.kremlin.ru/events/president/transcripts/24034 (accessed 15 February 2020).

2 **Government of the Russian Federation** (2012). Prime Minister Vladimir Putin meets with experts in Sarov, 24 February 2012, available at http://archive.government.ru/eng/docs/18248/ (accessed 15 February 2020).

3 **U.S. Department of State** (2007). Joint U.S.-Russian Statement on the Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles at the 62nd Session of the UN General Assembly, New York, 25 October 2007, available at https://2001-2009.state.gov/r/pa/prs/ps/2007/oct/94141.htm (accessed 15 February 2020).

4 **President of Russia** (2019). Plenary Session of the Eastern Economic Forum, 5 September 2019, available at http://en.kremlin.ru/events/president/news/61451 (accessed 15 February 2020).

5 **President of Russia** (2007), op cit.

6 **SIPRI** (2018). SIPRI Yearbook 2018: Armaments, Disarmament and International Security (Oxford: Oxford University Press, 2018), pp. 235-287.

7 **SIPRI** (1990). SIPRI Yearbook 1990: World Armaments, Disarmament and International Security (Oxford: Oxford University Press, 1991), pp. 3-5; SIPRI (2018), op cit.

8 **Office of the U.S. Press Secretary** (1990). Soviet-United States Joint Statement on Future Negotiations on Nuclear and Space Arms and Further Enhancing Strategic Stability, 1 June 1990, available at https://bush41library.tamu.edu/archives/public-papers/1938 (accessed 15 February 2020).

9 These are primarily sea-based and ground-mobile weapons systems by warheads count.

10 **Dvorkin, Vladimir** (2017). Offensive arms reductions. In: Arbatov, Alexey, Dvorkin, Vladimir (eds.). Polycentric nuclear world: New Challenges and Opportunities (Moscow: Moscow Carnegie Center, 2017), pp. 67-68. [in Russian]

11 **Borger, Julian** (2019). US arms control office critically understaffed under Trump, experts say. The Guardian, 1 July 2019, available at https://www.theguardian.com/world/2019/jul/01/us-arms-control-office-understaffed-trump?utm_term=Autofeed&CMP=twt_gu&utm_medium=&utm_source=Twitter#Echobox=1561965873 (accessed 15 February 2020).

12 **President of Russia** (2018). Presidential Address to the Federal Assembly, 1 March 2018, available at http://en.kremlin.ru/events/president/news/56957 (accessed 15 February 2020).

13 Ibid.

14 **Tukembaev, Choro** (2018). Tsunami Aiming at Washington. Military-Industrial Courier, 25 December 2018, available at https://vpk-news.ru/articles/47228 (accessed 15 February 2020). [in Russian]

15 **Soviet Union – United States** (1985). Joint Soviet-United States Statement on the Summit Meeting in Geneva, 21 November 1985, available at https://www.reaganlibrary.gov/research/speeches/112185a (accessed 15 February 2020).

16 **Office of the U.S. Press Secretary** (1990), op. cit.

17 **Colby, Elbridge** (2018). If You Want Peace Prepare for Nuclear War. Foreign Affairs, 97(6): 25-32; **Khramchikhin, Alexander** (2019). The Dangers of the Collapse of the Unipolar World. Independent Military Review, 11 January 2019, available at http://nvo.ng.ru/concepts/2019-01-11/1_1029_welt.html (accessed 15 February 2020) [in Russian]; **Akhmerov, Yevgeny, Valeev, Marat & Akhmerov, Dmitry** (2016). Balloon – A Friend of "Sarmat," Military-Industrial Courier, 12 October 2016, available at https://vpk.name/news/165525_aerostat__drug_sarmata.html (accessed 15 February 2020) [in Russian].

18 **U.S. Department of Defense** (2018). Nuclear Posture Review (Washington, DC: Department of Defense, 2018), p. 21.

19 **U.S. Department of Defense** (1974). Report of the Secretary of Defense James R. Schlesinger to the Congress on the FY 1975 Defense Budget and FY 1975-1979 Defense Program, 4 March 1974, available at http://history.defense.gov/Portals/70/Documents/annual_reports/1975_DoD_AR.pdf?ver=2014-06-24-150705-323 (accessed 15 February 2020).

20 **U.S. Department of Defense** (2018), op cit.

21 Ibid.

22 **Ministry of Defence of the Russian Federation** (2003). The Priority Tasks of the Development of the Armed Forces of the Russian Federation, available at http://red-stars.org/doctrine.pdf (accessed 15 February 2020).

23 **The Military Doctrine of the Russian Federation** (2014). Approved by the President of the Russian Federation on December 25, 2014, No. Pr.-2976, available at https://rusemb.org.uk/press/2029 (accessed 15 February 2020).

24 **Akhmerov et al.** (2016), op cit.

25 **Gerasimov, Valery** (2019). The General Staff Is Planning Strikes, Military-Industrial Courier, (9): 6. [in Russian]

26 **President of Russia** (2018), op cit.

27 **Lowther, Adam & McGiffin, Curtis** (2019). America Needs a "Dead Hand." War on the Rocks, 16 August 2019, available at https://waron therocks.com/2019/08/america-needs-a-dead-hand/ (accessed 15 February 2020).

28 **Khramchikhin, Alexander** (2013). Attack of the Chinese Aircraft Industry, Military-Industrial Courier, 20 May 2013, available at https://vpk-news.ru/articles/15967 (accessed 15 February 2020). [in Russian]

29 **Khramchikhin, Alexander** (2013). Operation "Overlord," Beijing Style, Military-Industrial Courier, 8 April 2013, available at https://vpk-news.ru/articles/15338 (accessed 15 February 2020). [in Russian]

30 **Khramchikhin, Alexander** (2013). Chinese Expansion Is Inevitable, Military-Industrial Courier, 2 September 2013, available at https://vpk-news.ru/articles/17276/ (accessed 15 February 2020). [in Russian]

31 **SIPRI** (2018), op cit.

32 **Esin, Viktor** (2012). The Third after the U.S. and Russia: On the Chinese Nuclear Capability without Understatements and Exaggerations, Military-Industrial Courier, 2 May 2012, available at http://vpk-news.ru/articles/8838 (accessed 15 February 2020). [in Russian]

33 **Esin, Viktor** (2012). China's Nuclear Might. In: Arbatov, Alexey, Dvorkin, Vladimir & Oznobishchev, Sergei (eds.). The Prospects of Chinese Involvement in Nuclear Arms Limitation (Moscow: IMEMO RAN, 2012), pp. 27-35. [in Russian]

34 **U.S. Defense Intelligence Agency** (2019). Lt. Gen. Robert P. Ashley, Jr., Director Defense Intelligence Agency, Russian and Chinese Nuclear Modernization Trends, Remarks at the Hudson Institute, 29 May 2019, available at https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends (accessed 15 February 2020).

35 "The South China Sea islands and Diaoyu Islands are inalienable parts of the Chinese territory ... To solve the Taiwan question and achieve complete reunification of the country is in the fundamental interests of the Chinese nation and essential to realizing national rejuvenation ... China ... will never allow the secession of any part of its territory by anyone, any organization or any political party by any means at any time. We make no promise to renounce the use of force, and reserve the option of taking all necessary measures." **The State Council Information Office of the People's Republic of China** (2019). China's National Defense in the New Era (Beijing: Foreign Languages Press Co. Ltd., 2019), p. 7.

36 Ibid., p. 10.

37 Ibid., p. 8.

38 Ibid., p. 9.

39 **SIPRI** (2018), op cit., p. 262.

40 **U.S. Mission to the United Nations** (2019). Remarks at a UN Security Council Briefing on Threats to International Peace and Security, 22 August 2019, available at https://usun.usmission.gov/remarks-at-a-un-security-council-briefing-on-threats-to-international-peace-and-security/ (accessed 16 February 2020).

41 **Cohn, Jacob, Walton, Timothy A., Lemon, Adam & Yoshihara, Toshi** (2019). Leveling the Playing Field. Reintroducing U.S. Theater-range Missiles in a Post-INF World (Washington, DC: Center for Strategic and Budgetary Assessments, 2019), pp. 6-9.

42 Ibid., pp. 8-9.

43 **Pifer, Steven** (2019). The Death of the INF Treaty has Given Birth to New Missile Possibilities. The National Interest, 18 September 2019, available at https://nationalinterest.org/feature/death-inf-treaty-has-given-birth-new-missile-possibilities-81546 (accessed 15 February 2020).

44 **Freedberg Jr., Sydney J.** (2018). What Weapons Will The US Build After The INF Treaty? Breaking Defense, 22 October 2018, available at https://breakingdefense.com/2018/10/what-weapons-will-the-us-build-after-the-inf/ (accessed 15 February 2020).

45 **Ketonov, Sergey** (2019). Lockheed Martin was Bypassed at Hypersonic, Military-Industrial Courier, (35): p. 9. [in Russian]

46 **Cohn et al.** (2019), op cit., pp. 32-33.

47 **U.S. Department of Defense** (2018), op cit., p. 32.

48 **Shirokorad, Alexander** (2019). The Doomsday Weapon, Independent Military Review, (19): 6-7. [in Russian]

49 Estimate by the author.

50 **U.S. Department of Defense** (2018), op cit., p. 23, 32.

51 **Khramchikhin, Alexander** (2019). Military Cooperation of Russia and China, Independent Military Review, (34): 12-13. [in Russian]

52 **Reuters** (2019). Russia helping China to build missile-attack warning system: Putin. Reuters, 3 October 2019, available at https://www.reuters.com/article/us-russia-china-missiles/russia-helping-china-to-build-missile-attack-warning-system-putin-idUSKBN1WI20E
(accessed 16 February 2020).

53 **Ministry of Foreign Affairs, the People's Republic of China** (2019). Foreign Ministry Spokesperson Geng Shuang's Regular Press Conference, Beijing, 6 May 2019, available at https://www.fmprc.gov.cn/nanhai/eng/fyrbt_1/t1661163.htm (accessed 15 February 2020).

54 **Ministry of Foreign Affairs, the People's Republic of China** (2019). Foreign Ministry Spokesperson Lu Kang's Regular Press Conference on May 20, 2019, available at https://www.fmprc.gov.cn/ce/celv/eng/fyrth/t1665026.htm (accessed 16 February 2020).

55 **Ministry of Foreign Affairs, the People's Republic of China** (2019). Foreign Ministry Spokesperson Geng Shuang's Regular Press Conference on July 16, 2019, available at https://www.fmprc.gov.cn/ce/cgjed/eng/fyrth/t1681503.htm (accessed 16 February 2020).

56 **SIPRI** (2018), op cit., p. 262.

57 **U.S. Mission to the United Nations** (2019), op cit.; **Cohn et al.** (2019), op cit., p. 5.

58 **Thompson, Andrea & Trachtenberg, David** (2019). Hearing on The Future of Arms Control Post-Intermediate-Range Nuclear Forces Treaty, U.S. Senate Committee on Foreign Relations, 15 May 2019, available at https://www.foreign.senate.gov/hearings/the-future-of-arms-control-post-intermediate-range-nuclear-forces-treaty (accessed 15 February 2020).

59 Those are deployed on heavy bombers, which are subject to New START. China may indicate that those are not counted as individual warheads under the 1,550 warheads ceiling.

60 They are deployed on four modified Ohio-class strategic submarines, and on 20 attack Virginia and Sea Wolf-class submarines, as well as on 22 Ticonderoga-class cruisers and 76 Arleigh Burke-class destroyers. **Miasnikov, Eugene** (2013). The Air-Space Threat to Russia. In: Arbatov, Alexey & Dvorkin, Vladimir (eds.). Missile Defense: Confrontation and Cooperation (Moscow: Carnegie Moscow Center, 2013), p. 131.

61 **President of Russia** (2018), op cit.

The Case for China's Participation in Trilateral Arms Control

Tong Zhao

1. THE NEED FOR CHINA TO DEEPEN ITS PARTICIPATION IN ARMS CONTROL

Despite growing international pressure for China to "join" arms control, Beijing generally dismisses the way the issue is framed. From its perspective, China is already an active contributor to arms control activities, including its participation in the negotiation and the signing of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), its previous efforts to promote negotiations among the Nuclear Weapons States to reach a joint No First Use agreement, its participation in various arms control talks within the U.N. and Conference on Disarmament frameworks, and its help with revitalizing the P5 process to discuss disarmament, among other things.[1] That said, there are several reasons that China can and should consider deepening its participation in arms control, as it will serve key Chinese interests and help promote regional and global stability.

1.1 FACILITATE U.S. AND RUSSIAN NUCLEAR REDUCTIONS

China generally recognizes that the previous bilateral measures by the United States and Russia to reduce their nuclear arsenals have significantly improved China's security situation. If the two big powers stop the reductions process and eliminate existing bilateral arms control agreements, China's security would inevitably be undermined. In the case of New START, China benefits from the transparency and verification measures in the treaty. Without them Beijing would likely have to apply worst-case thinking to its assessment of future U.S. and Russian nuclear arsenals. The longer after the treaty's expiration, the greater the uncertainties about the exact U.S. and Russian capabilities. That way, China could be dragged into a negative action-reaction nuclear competition cycle among the three countries.[2]

Over the years, China's impact on U.S.-Russian bilateral arms control has grown to the point where it cannot be ignored. In U.S. policy circles, some predict China's nuclear arsenal will at least double in the next decade.[3] Many American experts argue that the U.S. must hedge against a scenario in which China will sprint to parity with the United States. This leads such people to oppose further

reductions in U.S. forces.[4] Even Russian experts and former senior military officials, who are usually more sympathetic to China's nuclear policy than Western experts, have raised serious questions about whether China's nuclear arsenal is indeed as small as most people believe.[5] Such doubts likely affect Russian experts' calculations about the necessary size of Russia's future arsenal. Therefore, there is an increasing need for China to recognize the connection between the transparency and predictability of its nuclear modernization and the U.S. and Russian incentives to continue drawing down their nuclear forces and maintain their existing arms control mechanisms.

1.2 MAINTAIN STABILITY AT THE STRATEGIC LEVEL

From the Chinese perspective, the traditional concept of strategic stability is based on a relationship of mutual nuclear vulnerability. For China, mutual assured destruction by nuclear weapons provides a foundation to maintain arms race and crisis stability.[6] However, Chinese experts worry that the United States is no longer committed to the traditional concept of strategic stability or interested in discussing strategic nuclear security issues by using this framework.[7] They view the shift of U.S. views on this critical issue as evidence of Washington rejecting a mutual nuclear vulnerability relationship with Beijing. They also observe persistent U.S. interest in acquiring damage-limitation capabilities against China,[8] capabilities that do not look significantly different from counterforce first-strike capabilities to Chinese strategists. The perceived decline in the U.S. political commitment to maintaining strategic stability with China is likely to cause serious Chinese fears about U.S. strategic intentions. This may lead to higher levels of investment into its nuclear modernization program to ensure the existence of a de facto mutual nuclear vulnerability relationship.

New challenges also arise at the technical level. Nonnuclear strategic technologies, such as missile defense, conventional precision-strike weapons, counter space weapons, remote sensing technologies, and cyber weapons, among others, present potential threats to nuclear weapons systems. Those challenges are usually exacerbated by a tendency to overestimate the impact of new technologies. Chinese and Russian nuclear modernization efforts to offset the impact of U.S. nonnuclear technologies are often seen by the United States as excessive and driven by revisionist goals to adopt more aggressive nuclear postures. And the United States then feels obligated to respond. Divergent understandings about the impact of new technologies make it much more challenging to maintain strategic stability.

To avoid a nuclear arms race and maintain strategic stability is clearly in China's interest. But it would become harder to achieve that interest if China waits longer to engage in arms control and cooperative security measures that help contain the arms competition before it further intensifies. Whether the United States is willing to accept a mutual vulnerability relationship with China may be a function of whether it perceives China as a status quo power as opposed to a revisionist power that embraces aggressive intentions. From the U.S. perspective, a revisionist power that seeks to change the status quo may be less deterrable by mutual vulnerability as it has an inherent incentive to provoke; and thus the United States may have to develop the capacity to stop any attacks that aim at forcefully changing the existing security landscape. For this reason, it has not been very productive for China to complain about the lack of explicit acknowledgement of and commitment to mutual vulnerability by the U.S. side. Rather, there may be more effective ways for China to influence U.S. thinking on mutual vulnerability by taking measures that can help assure the United States of China's strategic intentions.

In the nuclear area, China's benign strategic intention can be shown by demonstrating that it has no plan to increase its nuclear forces to a level inconsistent with a minimum deterrent doctrine, or to raise the status of its nuclear weapons in national security strategy, or to broaden the scenarios of potential employment of its nuclear weapons. Chinese participation in arms control measures that can provide transparency and put some tangible limit on some of these activities would be a convincing demonstration of Chinese intention.

Arms control is needed to regulate the development and/or deployment of new technologies or at least help narrow the perception gap between states on the nature or degree of the threat posed by new technologies against nuclear weapons systems. This can help manage the intensity of arms competition by containing the severity and prevalence of worst-case scenario thinking that drives nuclear modernization investments.

Furthermore, the impact of the introduction of new technologies on conflict escalation and crisis management is far from being fully understood by decision-makers in the main possessor states of such technologies. The scholarly community has started to examine the potential impact, including conducting research on, for example, how conventional hypersonic weapons may create new ambiguities that can lead to inadvertent escalation,[9] how the entanglement

of nonnuclear technologies and nuclear weapons systems may cause misunderstandings and misjudgment in military crises,[10] how the incorporation of artificial intelligence (AI) into strategic warning may undermine the system's reliability and affect strategic stability,[11] and how the use of cyber technologies against each other's nuclear command and control system can generate new pathways to misperceptions and overreactions.[12] A general consensus is emerging within the Western scholarly community that such risks are serious and need to be addressed systematically and sooner rather than later. In the meantime, the Chinese counterparts are following such research but do not appear to have arrived at the same level of concern and urgency as their Western colleagues.

At the government level, there is clearly lack of awareness and appreciation of such risks. Defense procurement decisions and military doctrines are being made without considering these potential risks. It is almost inevitable that when great power competition grows, states focus more of their attention on how to improve their military effectiveness. Thinking through how some of the new capabilities may exacerbate escalation dynamics becomes a secondary priority. The introduction of dual-capable ballistic missile systems that can deliver either nuclear or conventional warheads is one example of this worrisome trend. Such missile systems have greater operational flexibility and efficiency on the battlefield but they also present a challenge for an enemy to accurately understand the nature of the threat it faces during a crisis. If a confused enemy overreacts, one's own security would be severely undermined as a result of inadvertent escalation. Awareness of such risks does not come automatically, especially not for countries like China, which does not have first-hand experience of serious nuclear crises and military incidents involving nuclear weapons. As a result, arms control talks would be quite necessary to raise risk awareness among experts, military strategists, and political decision-makers. Only after states share a common understanding of the risks, would it be possible for them to have serious discussions about how the development and/or deployment of new technologies can be regulated to address these risks. With great power competition on the rise, the need to prevent arms competitions from introducing new escalation risks that threaten everyone and undermine strategic stability becomes ever more pressing.

Arms control is also an imperative for big powers to assure each other about their strategic intentions at a time when their overall relations become more competitive and distrust grows. In the case of China, the intensifying competition

with the United States saw the rise of the view in Beijing's security policy circles that Washington has adopted a strategic goal of undermining and destabilizing China and is willing to use all means at its disposal to preserve U.S. "hegemonic power" and "global dominance."[13] At the same time, U.S. suspicion of China's strategic intentions has deepened and there is growing concern about an expansionist and revisionist China seeking to replace the United States and dictate international rulemaking in the future. Against this background, it is even more important that America and China make every effort to assure each other about their strategic nuclear security objectives. A reaffirmation of the shared goal of maintaining strategic stability and joint arms control efforts to regulate their strategic forces for the achievement of this common objective can help build confidence that at the fundamental level they have no intention to threaten the very survival of each other or to challenge their most critical security interests. All that could happen, despite the continuous existence of serious disagreements and disputes over other issues.

1.3 MANAGE CONVENTIONAL COMPETITION

The conventional military competition among the great powers is even more troublesome than their nuclear competition. Unlike at the nuclear level, there is no shared vision of respecting mutual vulnerability, maintaining arms race stability, and preventing military conflict at the conventional level. In some cases, the great powers embrace competing visions about the desired end states of their conventional military balance. China believes the only way to secure its territorial integrity in the South China Sea, East China Sea, and over the Taiwan Strait is to acquire conventional military superiority over its regional rivals and over the United States in parts of the West Pacific, so that when it becomes necessary for China to use physical means to defend its perceived territorial integrity, its regional rivals could do nothing and the United States would be deterred from even trying to intervene. China sees it as a legitimate strategy to advance a defensive objective, but it requires a regional conventional military balance that is in China's favor and would by no means be acceptable to China's rivals and the United States. For those actors, their security (and survival, in some cases) relies on a regional conventional military balance that never completely favors China. Such incompatible visions almost guarantee that future conventional competition will be exceptionally intense.

So far, China does not seem to be bothered by the lack of arms control institutions to mitigate or regulate the ongoing conventional military competition

in the Asia Pacific region. As China's GDP growth rate has been much higher than all its regional rivals, including the United States over the past decades, Chinese experts have shown a high level of confidence about China's capability to outcompete its rivals in the conventional military domain. Time appears to be on China's side and it only needs to be patient. However, this optimism does not take into account a few issues that would have a negative impact on China's security.

China's conventional military superiority would work against its efforts to maintain a stable nuclear relationship with the United States, for at least two reasons. First, from the Chinese perspective, the foundation of a stable nuclear relationship with the United States is for Washington to acknowledge and accept a de facto mutual nuclear vulnerability relationship with Beijing. However, one important reason that the United States has refused to do so is opposition from its allies such as Japan, who worry that a stable U.S.-China relationship at the nuclear level would embolden Chinese military aggression at the conventional level. For countries like Japan, it is important that the U.S.-China nuclear relationship is not 100 percent stable so that China would have to worry about the risk of a conventional conflict escalating to the nuclear level and thus be deterred from initiating conventional aggression against its neighbors. The more successfully China establishes regional conventional military superiority, the more worried Japan and other U.S. allies will become, and therefore the more strongly they might lobby against Washington accepting mutual vulnerability or maintaining strategic stability with Beijing. This would undermine China's core nuclear policy objective.

Second, the same logic impels U.S. regional allies to oppose Washington embracing a No First Use (NFU) policy. The Obama administration decided not to adopt NFU largely because U.S. allies argued that China's growing conventional capabilities and increasing willingness to flex its conventional military muscle made a conventional-only U.S. military response appear too weak and too late to stop a massive Chinese conventional attack. Further increasing China's conventional superiority would make the United States even less likely to adopt a policy of NFU. This would be very problematic for China who has long sought a mutual NFU agreement with the United States and other nuclear weapons states. Beijing sees such an agreement as the most important nuclear risk reduction and arms control measure. However, it appears China has not recognized this internal mismatch between its nuclear and conventional policy goals.

Furthermore, China's conventional military superiority could create greater interest among concerned U.S. allies about developing indigenous military nuclear capabilities. In some quarters of Japan's security policy circles, a connection has long been made between the Chinese conventional military threat and Japan's need for its own nuclear weapons.[14] South Korea has grown wary of China's conventional capabilities and wants to hedge against future uncertainties, especially after experiencing harsh punishment from Beijing because of the deployment of a THAAD missile defense system.[15] Australia's growing concern about China's conventional military capability has led to voices calling for an independent nuclear deterrent, including from a former deputy secretary of defense.[16] Against the background of declining U.S. security commitments to its allies, such proliferation risks appear to increase. As a result, China's security interests could be significantly undermined.

All the above are important reasons for China to participate in the cooperative management of conventional military competition in the Asia Pacific region. Direct China-U.S. discussions on concepts to promote mutually acceptable regional conventional arms control measures would be useful for this purpose. But that is not the only reason for great power cooperation on the conventional balance. In a post-INF world, the United States has incentives to deploy land-based INF-range conventional missiles in the Asia Pacific region to counterbalance the growing Chinese conventional capabilities. However, such missiles may end up becoming a greater threat to North Korea, whose security would be more seriously affected by U.S. conventional precision strike weapons than that of China. Consequently, North Korea would likely choose to further enhance its nuclear and strategic conventional strike capabilities.[17] Such North Korean reactions would not only directly worsen the security environment in Northeast Asia, but have additional ripple effects on China. As the military threat from North Korea grows, the United States, South Korea, and Japan would have stronger incentives to deploy missile defense and even preemptive deep-strike capabilities against the DPRK. China and Russia would likely view such capabilities as a threat to their own nuclear deterrent. In other words, an intensified U.S.-China conventional competition in the region could worsen the security dynamics vis-à-vis third parties (North Korea, in this case), which would then destabilize the great powers' nuclear and overall security relations. Due to the stakes involved, it is time for China and the other great powers to include in arms control talks the issue of managing their growing conventional competitions.

1.4 ECONOMIC NECESSITY AND INTERNATIONAL IMAGE

New economic realities present additional reasons for China and other great powers to work together on arms control. For the foreseeable future, economic prospects do not look particularly bright for America, Russia, or China. After decades of fast economic growth, deep structural problems with China's economic and financial systems have started to emerge and deteriorate. The looming stagnation, deep government debts, a lurking housing bubble, China's fast-aging society, unprecedented trade conflicts, and growing decoupling between Chinese and Western economies, among other critical issues, are forcing people to accept that the era of China's rapid economic growth is behind us. There are growing concerns among some economists that an economic crisis may be around the corner.[18] In contrast, over the previous years of material abundance, high levels of confidence within the Chinese expert community and the general public about China's long-term capability to out-invest and outcompete its main rivals in defense capabilities were widespread. It is uncertain how quickly the new economic realities today will change people's perceptions, but rational decision-makers need to be cool-headed and far-sighted about the economic implications for China's defense policy. They need to think about and prepare for a future in which they would have much fewer resources to invest in military modernizations than before.

As an example, in a post-INF world, can the United States, Russia, and China really afford a massive reciprocal buildup of INF-range missiles? If decision-makers take prudent consideration of the economic realities they are likely to face in the future, a joint arms control effort to prevent a costly arms race that would not improve anyone's security should look more appealing.

Increased Chinese participation in arms control could also generate important political benefits. Chinese experts see its strategic competition with the United States as a comprehensive and long-term process. One important element is competition for influence in international rule setting and for global leadership in shaping and maintaining key international institutions. Arms control is an important part of international institutions and China has already shown interest in improving its image as a responsible power by showcasing its support for the international arms control agenda. Especially at a time when Washington is withdrawing its participation in existing arms control regimes and voluntarily vacating its long-standing leadership role in this arena, China may step in, hoping to establish its image as a more responsible future leader in global

affairs and a stronger supporter of multilateralism. Recent examples are China's efforts to revitalize the P5 process on nuclear disarmament as well as the public announcement to initiate domestic legal procedure for China's accession to the Arms Trade Treaty.[19] Looking into the future, as more members of the international community explicitly call for China's participation in arms control, a positive response from Beijing could help China win international support and favorable reputation. This would augment Beijing's efforts to build up international soft power. As China's military power to defend its global economic interests expand, China's cooperation in arms control could reduce incentives for others to build up military power to balance China. For the international community, competition between the great powers over international leadership on arms control would be much more favorable and welcome than unconstrained competition over military power.

2. POSSIBLE APPROACHES TO CONDUCT TRILATERAL ARMS CONTROL

Admittedly, although there are strong arguments for China to deepen its participation in arms control, trilateral arms control with the United States and Russia is not necessarily the only way to do so. Nonetheless, trilateral arms control can provide unique benefits, which this paper seeks to identify and analyze.

From China's perspective, U.S.-Chinese bilateral arms control may inadvertently reinforce the impression of a formal rivalry relationship resembling that of the U.S.-USSR relationship during the Cold War. Beijing wants to avoid that impression. A trilateral mechanism can help. Moreover, China may have greater confidence about its capability to protect its key interests in a trilateral process than in bilateral U.S.-China negotiations. Russia could help support China's positions on issues of common concern such as missile defense and space-based weapons.

Politically, trilateral arms control diplomacy can help raise China's status as a major global military power on par with the two former superpowers, something that may be appealing to Chinese leaders who have invested in military modernization to help raise China's international status and to rally domestic support. The achievements of military modernization have been selling points to prove the advantages of the Chinese model and the competence of its political leadership. Trilateral arms control could also promote China's image as a supporter of multilateralism in international affairs.

2.1 PRECONDITIONS TO A TRILATERAL PROCESS

The greatest obstacle for China to deepen participation in arms control is the perception that the other parties, especially the United States, may seek to use arms control to help win great power competition against China. Within China's security policy circles, the long-standing majority view has always been that arms control is simply "a tool to maintain [U.S.] hegemony."[20] Such a view gets reinforced by senior U.S. officials emphasizing the intent to use nonproliferation and arms control policies to help achieve America's great power competition strategy.[21]

Persuading Chinese leaders to join trilateral arms control will require the United States to set a mutually acceptable objective. Using arms control to advance one's military advantage vis-à-vis China is a nonstarter for Beijing, especially as Washington cannot force China into any arms control deal. Cooperative arms control is only achievable if all parties accept the goal of managing rather than winning competition.

From this perspective, any arms control approach to be offered to China must be mutually beneficial and involve give and take from all parties. An approach that imposes constraints on China alone, will never work. The following are some arms control proposals that China could view as generally balanced and worthy of consideration. None of the proposed options would be easy to negotiate. The level of technical complexity would dramatically increase as countries move from a general political willingness to explore common interests to substantive negotiations on an implementable agreement. The purpose of these options, however, is to identify some general approaches through which trilateral arms control talks could be seriously considered. Thus, these options are meant to be balanced, fair, and equitable, seeking to take into consideration the most important security needs of all parties involved. The aim is to frame an approach that none of the three could immediately reject without exposing itself to the rest of the world as mal-intentioned.

2.2 TRILATERAL ARMS CONTROL: FOUR SPECIFIC PROPOSALS

The least ambitious proposal would be to prevent a reciprocal INF-type missile buildup in the Asia Pacific region. Instead of the U.S. deployment of INF-type missiles in the Asia Pacific, most likely followed by a possible Russian deployment and a response by China that could include a considerable increase in its INF-

type missile arsenal, all three could choose to maintain the status quo of their existing INF-type missile capabilities in the region. This would include nuclear and conventionally capable INF-type missiles. Such an arrangement would not only save them from a costly new INF-type missile competition that would not make any of them safer; it could also contribute to avoiding the likely political troubles associated with Washington convincing its regional allies to deploy such missiles on their territories and Beijing's retaliatory responses.

Additionally, the three countries could choose to negotiate whether hypersonic boost-glide weapons, which may not be covered by the INF definition, should be included in a status-quo freeze. They could also think about whether such an arrangement should be expanded to the global level, beyond the Asia Pacific region.

A second option would be to set an equal ceiling for all INF-range (500-5,500km) ground- and air-launched missiles, including nuclear and conventionally capable ones. This would address a key U.S., and to a lesser extent Russian, concern about China's large INF missile stockpile. Including air-launched INF-range missiles, in which the United States currently possesses a clear advantage and where Russia has also some advantage over China, would also be attractive to Beijing. Of China's total number of INF-range ground- and air-launched ballistic and cruise missiles, 1,250-2,650 are ground-launched missiles.[22] In addition to that, China possesses a small number of air-launched cruise missiles (ALCMs) and an even smaller number of air-launched ballistic missiles that are under development and may soon be introduced. The United States has no ground-launched missiles within this range limit but is procuring more air-launched cruise missiles such as the JASSM-ER and the Long-Range Anti-Ship Missile (LRASM). Together with the existing U.S. Air Launched Cruise Missiles and Conventional Air Launched Cruise Missiles, the total number of U.S. INF-range ground- and air-launched missiles will reach or exceed 2,000 in the near-term future.[23] Russia reportedly has deployed a small number of INF-range 9M729 ground-launched cruise missiles (GLCMs) and has hundreds of ALCMs, in addition to a small number of newly introduced Kh-47M2 Kinzhal missiles that may qualify as air-launched ballistic missiles.[24] Therefore, an equal ceiling would give Russia some benefit by allowing it more room to expand such missile stockpiles, but given Russia's much smaller defense budget and overall GDP, the chances for Russia to grow its INF-range ground- and air-launched missile arsenals significantly are not very high.

This proposal does not include sea-launched INF-range missiles, for a number of reasons. One is that the existing capability gaps between the three countries in this realm are too great to make any equal ceiling agreement feasible. According to assessments by Russian experts, the United States can deploy a maximum of more than 6,000 INF-range Tomahawk cruise missiles on various naval platforms.[25] The Russian and Chinese numbers are in the hundreds or fewer. The second reason has to do with the traditional bureaucratic resistance against transparency and other arms control measures by navies including the U.S. Navy. Additionally, the United States and Russia view their air- and sea-launched INF-range missiles as a key component of their global military power projection capability. If they are going to limit their air-launched INF-range missiles in exchange for China limiting its ground-launched missiles, which only affect certain parts of the Asia Pacific, they may have a strong incentive to keep their sea-launched INF-range missiles out of such a trade to preserve their existing advantages in global power projection.

In this proposal, an equal ceiling for all three countries would leave them with considerable freedom and flexibility to decide how each country would like to mix their ground-launched and air-launched missile arsenals. Where to set an equal ceiling for all three countries would be a product of negotiations. The ceiling could be set as low as the same level of the current size of Chinese and U.S. stockpiles of ground- and air-launched INF-range missiles, in which case it would constitute a freeze arrangement. It could also be set higher than current stockpiles, in which case it would become a capping agreement. In either case, such a proposal could serve as the starting point for the three countries to think about how to manage their competition over INF-range missile capabilities.

A third option would combine the INF and New START frameworks. The most obvious way to achieve this is to set an equal ceiling for the total number of deployed ground-launched INF- and intercontinental-range ballistic missile (ICBM) launchers, submarine-launched ballistic missile launchers, and heavy bombers. In doing so, the three countries could adopt the same method as under New START to impose an equal upper limit on the total number of ICBM launchers, SLBM launchers, and heavy bombers. The only difference is that the scope of controlled weapons would be broadened by including INF-range ground-launched ballistic missile launchers as well. In doing so, the three countries can put themselves under the same equal ceiling with relative ease, without making substantial changes to their current capabilities.

According to their most recent data submission, the United States and Russia currently have 668 and 513 deployed ICBM launchers, SLBM launchers, and heavy bombers, respectively; and both of them have no INF-range land-based ballistic missile launchers. China operates about 570 land-based INF- and intercontinental-range ballistic missile launchers,[26] 48 SLBM launchers with 24 additional ones to be deployed on two new SSBNs soon, as well as about 20 H-6 bombers,[27] the total number of which is 662 and is on the same scale as that of the United States and Russia. Such an equal ceiling for all three countries would not immediately reduce any of their existing capabilities but could include them all in one arms control framework on an equal footing. It would address the U.S. and Russian concerns about both China's INF-type missiles and its strategic nuclear forces. In doing so, it would meet the two principle demands by the Trump administration for China to join INF and New START in some form. It would also avoid creating the impression that China is forced into an unequal arms control agreement as a junior partner of two former superpowers.

There are many opportunities for the three countries to finetune the specific scope of weapons systems they might want to include under such an equal ceiling. For instance, they could think about whether to also add INF-range GLCMs and/or hypersonic boost-glide and/or intercontinental-range cruise missiles to the overall limit. The numbers of such weapons systems that are already deployed and may be deployed in the future will not be very large and should be relatively easy to be incorporated into such an agreement. This overall limit could first serve as a trilateral capping agreement. Should the strategic environment and the political will allow for it, it could gradually evolve into a freeze and later into a joint reduction agreement.

A fourth and more appealing option to China (and Russia) is to include kinetic missile defense interceptors into an overall ceiling. To some extent, this would help address Russian and Chinese concerns about the impact of U.S. missile defense on their strategic nuclear deterrents. One way to do so is for the three countries to negotiate an exchange ratio between one offensive missile and the number of kinetic interceptors that could intercept it with a certain high level of confidence, so that a country has the freedom to deploy interceptors as long as it cuts a corresponding number of offensive missiles to keep its overall number of weapons within the central limit.

For instance, the United States appears to operate under the assumption that four Ground-Based Interceptors (GBIs) would have to be fired against each

incoming ICBM in order to secure a certain probability of success.[28] If a general ratio of 1:4 is agreed for all INF- and intercontinental-range ballistic missiles and interceptors that are capable of countering such missiles, then in exchange for every four additional interceptors the United States deploys, it would need to cut one offensive missile from its existing stockpile. The United States does not plan to deploy a very large number of GBIs, but it may deploy hundreds of SM-3 and THAAD interceptors in the future, in which case the exchange mechanism may give Russia and China useful leverage to pressure the United States on its missile defense programs but still leave considerable room for Washington to make flexible decisions on the tradeoff between deploying missiles and interceptors.

All the above four proposals seek to provide politically acceptable options for the three countries to start talking about arms control. Due to their existing high level of distrust and China's particular lack of experience in implementing arms control verification, all the proposed ceilings and central limits are meant to come in the form of political commitments at the early stage of a trilateral process. Verification measures are not included in these initial proposals and could be elaborated at later stages of a trilateral process. Thus, nuclear and conventionally armed missiles are not particularly distinguished in the above proposals. That said, nothing prevents the United States and Russia from continuing their existing mutually beneficial bilateral transparency and verification measures under New START, even after a trilateral agreement is reached.

2.3 CAPACITY BUILDING ON VERIFICATION, DOCTRINES, AND A RULES-BASED ORDER

As mentioned above, even though the three countries can start discussions on arms control, that process may eventually come to a stage when serious verification measures need to be considered. China has less experience with designing and implementing verification measures than the other two countries. This has caused China to be more skeptical about the overall utility of arms control as a cooperative security arrangement.

An argument often heard within the Chinese security community is as follows: Even if China enters an arms control agreement with stronger parties such as the United States and Russia, such an agreement would inevitably favor the stronger parties because they have better technological capabilities to continue developing prohibited technologies in secret whereas China would end up being the only one constrained by the agreement.[29] Among other things, this popular

view reflects a serious level of distrust about the effectiveness of verification measures to ensure compliance with arms control obligations or timely detection of violations. Many Chinese security experts do not seem to have given thought to the historical fact that although the level of U.S.-USSR strategic distrust during the Cold War was even higher than in current U.S.-China relations, the United States and the Soviet Union were able to negotiate and implement a series of significant arms control agreements and were able to maintain a sufficiently high level of confidence and trust through verification.

If measures could be taken to help Chinese security experts appreciate the generally successful history of bilateral U.S.-Russian arms control endeavors and to understand how verification measures can be designed to overcome the distrust gap at the political level, an important obstacle against China's more active participation in arms control would be removed. These measures could start with inviting Chinese observers to U.S.-Russian arms control inspection activities. To increase Chinese interest to participate, no reciprocal demand should be made on China to also provide transparency and to open up its own facilities to foreign visitors, as the goal of such exercises should be to help build capacity, which, over the long run, could prove beneficial to all parties. The United States and Russia could start inviting Chinese observers to their New START on-site inspections and Open Skies flights, though the latter would require consent from other treaty members as well.

It would also make sense for the United States and Russia to share with their Chinese colleagues their experiences with providing transparency and implementing confidence-building measures (CBMs) in the nuclear field. This could include their experiences with setting up bilateral CBMs such as the missile- and space-launch notification agreements that include both pre- and post-launch notifications, as well as the exchange of telemetry generated during missile flight tests that seeks to provide openness and transparency. China's long-standing opposition to transparency and CBMs is deeply rooted in its history and culture of military secrecy,[30] especially in the area of strategic arms. One important benefit of a trilateral arms control process should be for the more experienced parties – the United States and Russia – to share their positive lessons learned from participation in existing bilateral CBMs to the newcomer and to help China overcome its habitual concerns.

Capacity-building measures need to include both vertical and horizontal efforts: vertical measures help Chinese experts develop deeper understandings and/or

new perspectives; and horizontal measures help build such capacity across a larger number of Chinese experts within the security community. In the case of arms control verification, China is generally supportive of international scientific cooperation to develop arms control verification technologies, but China's level of participation in international arms control verification initiatives and programs is modest. One of the reasons seems to be that the Chinese community of arms control experts with sufficient technical background is too small to support a wide and deep Chinese participation in various international initiatives like the IPNDV. The workforce is stretched thin and has a hard time keeping up. Therefore, it is important to help cultivate a larger number of Chinese experts, including the next generation. This requires extensive engagement among the U.S., Russian, and Chinese security policy and arms control communities in a sustainable manner over a long period. More Chinese experts supportive of the positive role of verification measures could mean an increased interest in exploring the possibility that future Chinese nuclear weapons and delivery systems are designed and manufactured in ways to facilitate transparency measures and even accommodate inspections without divulging sensitive information. Such deliberation and exploration at the technical and operational levels could take place already now to prepare for future options for the political decision-makers when they are ready for more arms control cooperation.

Vertical capacity building could help address mismatched understandings about each other's nuclear policies and thus remove obstacles for arms control cooperation. For instance, the majority view of the Chinese security community is that the United States, under the Trump administration, reemphasizes low-yield tactical nuclear weapons in order to more easily threaten other countries with nuclear weapons (in other words, to deliberately lower the threshold for nuclear use) and to build up U.S. nuclear warfighting capabilities.[31] When the other side is driven by a nuclear warfighting doctrine, Chinese experts do not see the value of arms control. For them, the right thing for China to do in this case is to enhance further its own nuclear capabilities to counterbalance the U.S. developments. However, the United States believes its nuclear policy readjustment is due to a growing interest in recent years in the Russian military doctrine to use tactical nuclear weapons in conventional conflicts, which, in turn, Washington wants to deter with its low-yield tactical nuclear weapons.

Trilateral arms control discussions should therefore focus on talking through the differences in the three parties' perceived nuclear policies of each other. Especially for countries where substantive internal policy debates rarely take

place, the questions and challenges posed among the three behind closed doors can be useful to stimulate new perspectives and provide opportunities for reflecting on potential inconsistencies and ambiguities in one's own doctrine and policy. On recent occasions when Chinese experts had the opportunity to watch U.S. and Russian experts having in-depth debates over the alleged Russian "escalate to deescalate" strategy, they saw that there is more substance and nuance to this debate than it originally appears. More importantly, although these Chinese experts did not necessarily share the U.S. view that Russia has a de facto "escalate to deescalate" nuclear strategy, they did seem to appreciate the fact that these are genuine concerns widely shared within the U.S. policy community. Such appreciation of the perspectives of "the other", by itself, could help reduce the suspicion that Washington simply uses the Russian policy as an excuse to build up U.S. nuclear warfighting capabilities. Substantive discussions about each other's nuclear doctrines and thinking in a trilateral setting can offer some unique benefit in containing worst-case thinking and developing empathy, both of which are necessary conditions for serious arms control talks.

China has long embraced the view that the only sensible way to conduct arms control is for all main nuclear weapons states to accept relationships of mutual vulnerability first and to adopt a minimal nuclear deterrent strategy with a doctrine of solely using nuclear weapons to deter nuclear attacks. To reject such proposals is seen as contradictory to arms control. However, China does not yet recognize the connection between some of its own military strategies and the reluctance of some other nuclear powers – especially the United States – to accept mutual nuclear vulnerability and the sole purpose doctrine. As mentioned above, America's and its allies' concern about China's efforts to achieve conventional superiority in its neighborhood coupled with the perceived growth of China's military assertiveness at the conventional level is a major barrier for Washington to embrace those nuclear policies that China desires. Such issues need to be thoroughly examined in future talks. Even if it is impossible for all three parties to reach common ground on these issues, achieving awareness and appreciation of each other's' perspectives as a result thereof, would be worth the effort.

Another element of capacity building could be educating the nuclear policy communities in all three countries to appreciate the importance of a rules-based nuclear order. Genuine interest in arms control is only possible if there is confidence that everyone is interested in building and maintaining a rules-based nuclear order that can better protect the respective national security interests as compared to a messy arms competition. At least in China, such confidence does

not yet exist. The dominant view within the Chinese security community is that all the other big powers are driven by a "might makes right" doctrine and that the nature of international relations is power politics. In a perceived world system where the law of the jungle applies, nationalistic analysts insist that a bigger nuclear arsenal will win China greater international respect.[32]

The most effective way to debunk such problematic perspectives is to develop balanced and nuanced understandings about the history of nuclear diplomacy, about each other's nuclear development programs, their underlying assumptions, and each other's nuclear policy deliberations as well as the various factors that contribute to the internal debates and calculations. From the very beginning, a trilateral arms control discussion should devote sustained efforts to sponsor deep, substantive, and extensive dialogues to talk through these nuanced issues. The goal should not be to generate quick changes to official policy or attitude. Rather, it would be to foster the development of balanced and nuanced perspectives. Over time, rational voices may gain momentum over simplistic and cynical perspectives, and support for a collective effort to build and maintain a rules-based global nuclear order may prevail.

2.4 STRATEGIC STABILITY AND RISK REDUCTION

In the near term, there are areas where trilateral efforts that focus on maintaining strategic stability and reducing the risk of nuclear use could start sooner than the capacity building measures outlined before. From the Chinese perspective, to maintain arms race stability means to consolidate de facto mutual nuclear vulnerability relations and to prevent other countries from acquiring disarming first strike capabilities against itself. To maintain crisis stability means to avoid nuclear conflict through crisis prevention and management. Chinese officials and experts are highly supportive of these goals as they help secure China's key interests.[33] That said, to effectively maintain strategic stability would require substantial efforts by China and the other two parties to reflect on their own thinking and practices and to jointly resolve key obstacles.

One obstacle of maintaining crisis stability has to do with countries' different perceptions of conflict escalation dynamics. For example, China appears generally sanguine about the prospect that conventional conflicts can be effectively controlled and will not easily escalate to the nuclear level. At the same time, China is pessimistic about the prospect of controlling nuclear escalation, including a widely shared belief that once the nuclear threshold is crossed with

even one nuclear weapon employed, there would be no way to control further escalation, and even a very limited nuclear conflict would quickly and inevitably develop into all-out nuclear war.[34] The majority view in the United States seems to be exactly the opposite. Many American experts worry about the risk of inadvertent escalation of conventional conflicts to the nuclear level but seem to believe that even after the nuclear threshold has been crossed there would still be opportunities to manage a limited nuclear conflict without causing all-out nuclear war. In previous discussions, such divergent beliefs in pre- and post-nuclear use escalation risks and dynamics sometimes caused the different parties to talk past each other.

One way to improve the effectiveness of these discussions would be to first raise mutual awareness of the differences in views and assumptions about crisis stability risks. It would be helpful to seek to understand the sources of divergent perspectives. Such understanding might help stimulate self-reflection on one's own thinking and beliefs. One possible reason, for instance, that the United States is less confident about countries' capabilities to effectively prevent conventional conflicts from escalating to the nuclear level is its firsthand experiences of serious military crises during the Cold War that almost led to inadvertent nuclear use. But Chinese leaders have much less experience in that regard and therefore largely dismiss how incidents, ambiguous signaling and misjudgment, or the fog of war could undermine the top leaders' capacity to understand and control military developments on the battlefield. Furthermore, China has rarely fought on foreign soil over the last three decades and Chinese leaders have not gone through the experience of accepting significant losses in conventional wars, which raises the question of whether China may be less inclined to escalate if it suffers unprecedented losses in a future conventional conflict.[35] The awareness of such issues could encourage China to adopt a more open attitude towards cooperative measures with other parties on conventional escalation management. Similarly, a deeper understanding by the United States about the Chinese reasoning of why a limited nuclear conflict could hardly be controlled might encourage Washington to reexamine the wisdom of relying too much on the hope of effectively managing a nuclear conflict after it breaks out as opposed to putting more emphasis on preventing any nuclear use in the first place.

Another obstacle comes from non-nuclear strategic technologies, which pose the greatest threat to arms race stability among the three countries. Their very significant and genuine disagreements about the level of impact from technologies

such as missile defense on the credibility of their respective nuclear deterrent are the primary drivers of Russian and Chinese current nuclear modernization efforts. There needs to be a joint effort to narrow such disagreements through substantive exchanges at the expert level, especially on key disputes that involve all three countries, such as the one over the extent to which the U.S. THAAD missile defense system's radar in South Korea may affect Russian and Chinese strategic nuclear forces. Here, a joint trilateral technical effort at the unclassified level could be useful.

Non-nuclear strategic technologies also pose challenges to crisis stability by introducing potentially new pathways to the inadvertent use of nuclear weapons in a conventional conflict. The growing great power competition makes decision-makers focus mostly on the potential military benefits that new technologies might provide. Yet, as discussed above, the introduction of such technologies also presents some real risks that could make nuclear conflict more likely. Those risks have not been fully understood and appreciated by decision-makers as well as their civilian and military advisors. One important step to maintain crisis stability among the three countries, therefore, would be to jointly raise awareness of such risks. Due to the level of technical complexity involved in these issues, the three countries should consider setting up joint expert working groups to examine each of the main areas where non-nuclear technologies could introduce new nuclear risks. These areas of non-nuclear technologies may include, but are not limited to, ambiguities stemming from conventional and dual-capable hypersonic missiles; risks of cyber interference with nuclear communication, command, and control systems; possible confusions caused by the entanglement of nuclear and non-nuclear weapons systems; and potential misuse of AI in strategic early warning and nuclear decision-making systems. Even unilateral risk reduction measures aimed at reflecting such considerations in each country's military planning and defense procurement projects could be very helpful.

A trilateral discussion on the alert status and practices of their nuclear forces could also contribute to crisis stability. There appears interest in some quarters of the Chinese military to argue for China's shift toward a launch-under-attack or launch-on-warning (LUA/LOW) posture – for further improving the credibility of China's nuclear retaliatory capability.[36] As China makes more efforts to build its own early warning system (with increasing Russian assistance), China's traditional thinking on the pros and cons of adopting LUA/LOW posture may change. The United States and Russia have kept their strategic nuclear weapons

on operationally available status during peacetime for their own unique reasons, but they also have rich experiences of going through dangerous incidents with their early warning systems and important lessons for caution that they could share with Chinese military experts in a trilateral setting. At least, they could help introduce to China the necessity of enhancing effective crisis communication between nuclear rivals through measures such as setting up nuclear risk reduction centers.

3. CONCLUSION

China stands to benefit from participating in such exchanges, if it keeps an open mind to recognize the invaluable lessons it can obtain and if it avoids the others' mistakes. It should have no fear to adopt near-term confidence-building measures and to start considering longer-term arms control options. No one can force China into unfair arms control deals. China's ever advanced hard power and diplomatic skills should give itself strong confidence that it can negotiate good arms control agreements that can better protect its own security interests than in an alternative world of uncontrolled and unlimited military great power competition. Trilateral arms control with the United States and Russia is one option for China to think about its future cooperative security strategy. Nothing prevents China from simultaneously considering other forms of arms control cooperation such as participating in a P5 multilateral arms control process or entering bilateral talks with America. These options are not mutually exclusive. For China, what it needs now is to demonstrate the political will to start exploring all possible options, including trilateral ones. As China begins to "take center stage in the world,"[37] it will be hard to imagine its top leader's grand vision of "building a community with a shared future for mankind"[38] can be achieved without engaging in cooperative arms control measures in the future. Early preparations for this future are in China's interest.

Endnotes

1 **Ministry of Foreign Affairs, the People's Republic of China** (2019). Maintaining Global Strategic Stability, Reducing Risks of Nuclear Conflicts – Statement by H.E. Mr. Fu Cong, Director-General of the Department of Arms Control of MFA at the 16th PIIC Beijing Seminar on International Security, 16 October 2019, available at https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/t1708326.shtml (accessed 16 February 2020).

2 **Manzo, Vince** (2019). Nuclear Arms Control without a Treaty? Risks and Options after New START (Washington, DC: CNA, 2019), p. 52.

3 **U.S. Defense Intelligence Agency** (2019). Lt. Gen. Robert P. Ashley, Jr., Director Defense Intelligence Agency, Russian and Chinese Nuclear Modernization Trends, Remarks at the Hudson Institute, 29 May 2019, available at https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends (accessed 15 February 2020).

4 **Cossa, Ralph A., Glosserman, Brad & Santoro, David** (2016). Reaching an Inflection Point? The Tenth China-U.S. Dialogue on Strategic Nuclear Dynamics, Issues & Insights, 16(20): 1-18.

5 **Arbatov, Alexey** (2014). Engaging China in Nuclear Arms Control. Carnegie Moscow Center, 9 October 2014, available at https://carnegie.ru/2014/10/09/engaging-china-in-nuclear-arms-control-pub-56886 (accessed 16 February 2020).

6 **Hu, Yumin & Ma, Yingjie** (2017). The New Strategic Relationship between China and America and the Trust between America and Russia in Nuclear Issues, Journal of Ocean University of China: Social Science Edition, (3): 65-73 [in Chinese]; Luo, Xi (2019). Arms Control Issue Moves up on China-U.S. Strategic Dialogue Agenda List, World Affairs, (9): 62-63. [in Chinese]

7 The 2018 U.S. Nuclear Posture Review Report does not repeat the previous commitment to maintaining strategic stability relationship with China or Russia. According to participants to P5 nuclear doctrine dialogues in 2019, U.S. officials explicitly rejected the term strategic stability.

8 **Talmadge, Caitlin** (2019). China and Nuclear Weapons. Brookings Institution, September 2019, available at https://www.brookings.edu/wp-content/uploads/2019/09/FP_20190930_china_nuclear_weapons_talmadge-1.pdf (accessed 16 February 2020).

9 **Acton, James M.** (2013). Silver Bullet? Asking the Right Questions About Conventional Prompt Global Strike (Washington, DC: Carnegie Endowment for International Peace, 2013).

10 **Acton, James M.** (2018). Escalation through Entanglement: How the Vulnerability of Command-and-Control Systems Raises the Risks of an Inadvertent Nuclear War, International Security, 43(1): 56-99; **Acton, James M., Arbatov, Alexey, Dvorkin, Vladimir, Topychkanov, Petr, Zhao, Tong & Bin, Li** (2017). Entanglement: Chinese and Russian Perspectives on Non-Nuclear Weapons and Nuclear Risks (Washington, DC: Carnegie Endowment for International Peace, November 2017).

11 **Fitzpatrick, Mark** (2019). Artificial Intelligence and Nuclear Command and Control, Survival, 61(3): 81-92.

12 **Futter, Andrew** (2016). Cyber Threats and Nuclear Weapons: New Questions for Command and Control. RUSI Occasional Papers, 15 July 2016, available at https://rusi.org/publication/occasional-papers/cyber-threats-and-nuclear-weapons-new-questions-command-and-control (accessed 16 February 2020); **Unal, Beyza & Lewis, Patricia** (2018). Cybersecurity of Nuclear Weapons Systems; Threats, Vulnerabilities and Consequences. Chatham House Research Paper, January 2018, available at https://www.chathamhouse.org/sites/default/files/publications/research/2018-01-11-cybersecurity-nuclear-weapons-unal-lewis-final.pdf (accessed 16 February 2020).

13 **Chen, Dingding** (2019). Common Methods and Fundamental Reasons of Western Countries' Containment of China. People's Forum Network, 14 June 2019, available at http://www.rmlt.com.cn/2019/0613/549434.shtml (accessed 16 February 2020) [in Chinese]; **Ouyang, Jie & Huan, Xiang** (2019). China's Development Momentum Is Unstoppable. People's Daily, 23 July 2019, p. 3. [in Chinese]

14 **Kulacki, Gregory** (2019). The Next Hiroshima and Nagasaki. Union of Concerned Scientists, 8 August 2019, available at https://allthingsnuclear.org/gkulacki/the-next-hiroshima-and-nagasaki (accessed 16 February 2020).

15 Private conversations of the author with senior South Korea defense experts, 2018-2019.

16 **White, Hugh** (2019). How to defend Australia. Australian Strategic Policy Institute, 2 July 2019, available at https://www.aspistrategist.org.au/how-to-defend-australia/ (accessed 16 February 2020).

17 **Panda, Ankit** (2019). New U.S. Missiles in Asia Could Increase the North Korean Nuclear Threat. Foreign Policy, 14 November 2019, available at https://foreignpolicy.com/2019/11/14/us-missiles-asia-inf-north-korea-nuclear-threat-grow/ (accessed 16 February 2020).

18 **Lambert, Hal** (2019). Is China About to Cause the Next Asian Economic Crisis? Realclear Politics, 13 August 2019, available at https://www.realclearpolitics.com/articles/2019/08/13/is_china_about_to_cause_the_next_asian_economic_crisis_140996.html (accessed 16 February 2020).

19 **Guo, Xiaobing** (2019). Why Is China Acceding to the Arms Trade Treaty, World Affairs, (21): 56-57. [in Chinese]

20 **Sun, Xiangli** (2001). Development and Evolution of Arms Control, World Economics and Politics, (5): 50-55. [in Chinese]

21 **Ford, Christopher** (2019). Countering Russian Intimidation and Aggression and Building a Better Security Environment: Testimony before the U.S. Senate Foreign Relations Committee, 3 December 2019, available at https://www.foreign.senate.gov/imo/media/doc/120319_Ford_Testimony.pdf (accessed 16 February 2020); **Rood, John C.** (2019). Written Testimony for the Honorable John C. Rood to the Senate Armed Services Committee (SASC), 5 December 2019, available at https://www.armed-services.senate.gov/imo/media/doc/Rood–Allvin_12-05-19.pdf (accessed 16 February 2020).

22 **U.S. Department of Defense** (2019). Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019, 2 May 2019, available at https://media.defense.gov/2019/May/02/2002127082/-1/-1/1/2019_CHINA_MILITARY_POWER_REPORT.pdf (accessed 16 February 2020), pp. 44, 117.

23 **U.S. Department of Defense** (2019). Fiscal Year (FY) 2020 Budget Estimates: Air Force Justification Book, Volume 1 of 1, Missile Procurement, March 2019, available at https://www.saffm.hq.af.mil/Portals/84/documents/FY20/PROCUREMENT/FY20_PB_3020_Missile.pdf?ver=2019-03-18-152808-823 (accessed 16 February 2020), pp. 59 et seq.; **U.S. Air Force** (2019). Agm-86b/C/D Missiles, published 24 May 2010, updated August 2019, available at https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104612/agm-86bcd-missiles/ (accessed 16 February 2020); **Lockheed Martin** (2017). U.S. Air Force Awards Lockheed Martin $413 Million for Jassm®-ER Production. Lockheed Martin, 1 June 2017, available at https://news.lockheedmartin.com/2017-06-01-U-S-Air-Force-Awards-Lockheed-Martin-413-Million-for-JASSM-R-ER-Production (accessed 16 February 2020); **Kristensen, Hans M.** (2014). W80-1 Warhead Selected for New Nuclear Cruise Missile. Federation of American Scientists, 10 October 2014, available at https://fas.org/blogs/security/2014/10/w80-1_lrso/ (accessed 16 February 2020).

24 **Arbatov, Alexey** (2019). A New Era of Arms Control: Myths, Realities and Options. Carnegie Moscow Center, 24 October 2019, available at https://carnegie.ru/commentary/80172 (accessed 16 February 2020); **Kristensen, Hans M. & Norris, Robert S.** (2019). Russian Nuclear Forces, 2019, Bulletin of the Atomic Scientists, 75(2): 73-84; **Persson, Gudrun (ed.)** (2016). Russian Military Capability in a Ten-Year Perspective –2016 (Stockholm: Swedish Defence Research Agency, 2016), p. 45.

25 **Miasnikov, Eugene** (2013). The Air-Space Threat to Russia. In: Arbatov, Alexey & Dvorkin, Vladimir (eds.). Missile Defense: Confrontation and Cooperation (Moscow: Carnegie Moscow Center, 2013), p. 130-131; **Arbatov** (2019), op cit.

26 **U.S. Department of Defense** (2019). Annual Report to Congress, op cit., p. 117.

27 **Kristensen, Hans M. & Korda, Matt** (2019). Chinese Nuclear Forces, 2019. Bulletin of the Atomic Scientists, 75(4): 171-178.

28 **Lewis, George** (2012). Ballistic Missile Defense: How Many GMD System Interceptors Per Target? Mostlymissiledefense, 23 May 2012, available at https://mostlymissiledefense.com/2012/05/23/ballistic-missile-defense-how-many-gmd-system-interceptors-per-target-may-23-2012/ (accessed 16 February 2020).

29 Private discussions by the author with senior Chinese experts, 2018-2019.

30 **Wu, Riqiang** (2016). How China Practices and Thinks About Nuclear Transparency. In: Li, Bin & Zhao, Tong (eds.). Understanding Chinese Nuclear Thinking (Washington, DC: Carnegie Endowment for International Peace, 2016).

31 **Li, Xianrong & Yang, Min** (2018). U.S. Will Further Enhance Nuclear Warfighting Capability. People's Liberation Army Daily, 1 March 2018, p. 11. [in Chinese]

32 **Global Times** (2017). Editorial: DF-41 Reportedly Deployed, China Will Gain More Respect. Global Times, 24 January 2017, available at https://opinion.huanqiu.com/article/9CaKrnK0065 (accessed 16 February 2020) [in Chinese]; **Global Times** (2016). Editorial: Strengthen Strategic Nuclear Capability: China Must Not Hesitate. Global Times, 23 December 2016, available at https://opinion.huanqiu.com/article/9CaKrnJZl6W (accessed 16 February 2020. [in Chinese]

33 **Fan, Jishe** (2019). Trilateral Negotiations on Arms Control? Not Time Yet. China-U.S. Focus, 13 September 2019, available at https://www.chinausfocus.com/peace-security/trilateral-negotiations-on-arms-control-not-time-yet (accessed 15 February 2020); **Ministry of Foreign Affairs, the People's Republic of China** (2019). Maintaining Global Strategic Stability, op cit.

34 **Cunningham, Fiona S. & Fravel, M. Taylor** (2019). Dangerous Confidence? Chinese Views on Nuclear Escalation, International Security, 44(2): 61-109.

35 The author thanks George Perkovich for raising this point.

36 **Kulacki, Gregory** (2016). China's Military Calls for Putting Its Nuclear Forces on Alert. Union of Concerned Scientists, January 2016, available at https://www.ucsusa.org/sites/default/files/attach/2016/02/China-Hair-Trigger-full-report.pdf (accessed 16 February 2020).

37 **BBC** (2017). Xi Jinping: Time for China to Take Centre Stage. BBC, 18 October 2017, available at https://www.bbc.com/news/world-asia-china-41647872 (accessed 16 February 2020).

38 **Cao, Desheng** (2019). China helping world to create shared future. China Daily, 20 August 2019, available at http://www.chinadaily.com.cn/global/2019-08/20/content_37503404.htm (accessed 16 February 2020).

ABOUT THE AUTHORS

Ulrich Kühn (editor) is Head of the Arms Control and Emerging Technologies program at the Institute for Peace Research and Security Policy at the University of Hamburg (IFSH).
kuehn@ifsh.de

Alexey Arbatov is Head of the Center for International Security at IMEMO, a former participant of the START-I negotiations (1991), and member of the Russian State Duma (1994-2003).
arbatov@imemo.ru

David Santoro is Vice President and Director for Nuclear Policy at Pacific Forum, a nonprofit foreign policy think tank based in Honolulu, Hawaii.
david@pacforum.org

Tong Zhao is a Senior Fellow in the Carnegie Endowment for International Peace's Nuclear Policy Program based at the Carnegie-Tsinghua Center for Global Policy.
zhaot2005@gmail.com

ABOUT THE INSTITUTE

The Institute for Peace Research and Security Policy (IFSH) researches the conditions for peace and security in Germany, Europe and beyond. The IFSH conducts its research independently. It is funded by the Free and Hanseatic City of Hamburg.

Funded by:
Hamburg | Ministry of Science, Research and Equalities

IFSH – **Institute for Peace Research and Security Policy** at the University of Hamburg
Beim Schlump 83 20144 Hamburg Germany Phone +49 40 866077-0 ifsh@ifsh.de www.ifsh.de