

New Challenges in Nuclear Arms Control

A return to nuclear arms control would be a sensible move at this point in time. However, this would require taking into account the differences between the Cold War era and the current day: The replacement of nuclear bipolarity by multipolarity and the linkage with non-nuclear military developments. Moreover, for the foreseeable future, there is little prospect of political leadership in arms control.

By Oliver Thränert

All nuclear powers are currently modernizing or expanding their nuclear arsenals. New technological developments such as improved accuracy of rockets or modern capabilities for detecting submarines are jeopardizing the survivability of nuclear arsenals. This threatens the stability of the nuclear balance. The Cold War maxim “Who shoots first, dies second” might soon be undermined.

It was to avoid such a scenario that the concept of arms control was developed in the US soon after the dawn of the nuclear age. Arms control is an attempt to resolve the problem of a potential breakdown of nuclear deterrence. The main goal is to prevent comprehensive nuclear wars and to establish strategic stability.

The revolutionary insight that the adversary’s security must always be taken into account in deliberations over one’s own security is at the core of the concept of arms control. It is based on a realistic understanding of self-interest: During crisis situations, uncertainty on the part of the adversary can result in unwanted escalation. At the same time, arms control includes nuclear disarmament, while not being identical with the latter. From the point of view of arms control, nuclear disarmament is not inherently advisable, but remains subject to considerations of stability.



Russian servicemen drive Yars RS-24 intercontinental ballistic missile systems during the Victory Day parade at Red Square in Moscow in May 2018. *Sergei Karpukhin / Reuters*

In political practice, arms control has certainly achieved some demonstrable results. In a number of treaties between the US and the Soviet Union, and later Russia, upper limits were agreed for the strategic nuclear arsenals of both sides, which in some cases led to reductions in numbers. In 1987, the two sides even agreed on a complete ban concerning intermediate-range nuclear arms, which prevented a destabilizing dynamic of armaments involving this class

of weapons. In the 1972 Anti-Ballistic Missile (ABM) Treaty, both sides agreed to limits in strategic missile defense, avoiding an arms race in the fields of defensive systems. After the dissolution of the Soviet Union, the Strategic Arms Reduction Treaty (START) of 1991 paved the way for Belarus, Ukraine, and Kazakhstan to rid themselves of the nuclear weapons based on their territory, which they handed over to Russia in 1994. Most importantly, how-

ever, the permanent dialog and the jointly verified implementation of agreements helped to create transparency and trust. It became easier for each side to understand the deliberations of the other.

Since the end of the Cold War, arms control has largely been put on the backburner. However, in view of the return to confrontational mode between the West and Russia and trilateral nuclear competition in Asia between China, India, and Pakistan, revisiting arms control would be sensible. That, however, would require awareness of the differences between the Cold War era and the present-day situation. In the following, we will look more closely at three of these differences that are particularly salient: The lack of political leadership in the international system; the replacement of nuclear bipolarity by nuclear multipolarity; and the growing linkage between the nuclear arms issue and non-nuclear military developments.

Lack of Leadership

A complex policy concept such as nuclear arms control requires political leadership. Although the US has not abandoned arms control altogether under President Donald

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Trump, the issue is hardly relevant anymore. Instead, the focus is on efforts to modernize the US nuclear weapons capacities. This is partially due to the fact that Russia, for its part, is also dismissive of arms control and is not meeting its treaty obligations. However, protracted and complex negotiations over arms control treaties are not really what President Trump has in mind. He is not overly interested in achieving compromises that benefit all parties within an international community. Rather, he wants to come out on top in a competitive international arena. This is not compatible with the notion of arms control policy based on equitable outcomes – a situation aggravated by the fact that the US has an edge in certain technological developments that promise to deliver important advantages in nuclear competition with other nuclear powers, such as improved targeting accuracy of rockets or more efficient capabilities for detection and pursuit of land-based missiles or submarines. Moreover, the political system in the US is so polarized and deadlocked that the ratification of an arms control treaty with the necessary two-

thirds majority in Congress is hardly conceivable, while Russia’s apparent violation of the INF Treaty is grist to the mill of those in Washington who are fundamentally opposed to all forms of arms control.

Indeed, Russia is just as unlikely to provide the leadership needed for nuclear arms control. President Vladimir Putin is deploying a policy of threats against the West instead of engaging in cooperative nuclear arms control with the US. Besides, Russia’s nuclear arsenal is one of the crown jewels of Russia’s claim to great-power status, and Moscow is unwilling to barter it away in negotiations, all the more so because its status vis-à-vis the US is diminishing when measured by many other parameters, particularly economic development.

All other nuclear-armed states lack experience regarding nuclear arms control. A resurgent China, just like the US and Russia, is focused on enforcing its own interests. For Beijing, the concept of consensus-based nuclear arms policy remains a largely foreign one. Moreover, China fears that the improved transparency that comes with nuclear arms control could jeopardize the survivability of its relatively small second-strike capability. While India would like to be regarded as a responsible nuclear actor, it is unwilling to accept nuclear restrictions in view of its large neighbor China. Pakistan, for its part, is not interested in engaging in arms control before Delhi makes any moves in that direction.

Nuclear Multipolarity

In order to demonstrate the equal political status of the two powers, nuclear arms treaties between the US and the Soviet Union/Russia were based on the notion of parity. Even today, the US and Russia still possess about 90 per cent of all the world’s nuclear weapons. However, the strategic picture has changed for both powers, since other states are building up nuclear weapons and missile arsenals that, both from the US and the Russian point of view, are of great importance for their respective national security. Therefore, both Russian and US decision makers believe that bilateral agreements on upper limits for nuclear weapons or other systems related to nuclear deterrence, such as missile defense, are no longer conducive to the national security of their respective states.

The examples of Washington’s withdrawal from the ABM Treaty and Russia’s viola-

tions of the INF Treaty illustrate why this is the case. In 1972, the US and the Soviet Union agreed on the ABM Treaty, which limited strategic missile defense systems to two on each side, further reduced to one defensive system each in an additional protocol in 1974. The purpose of this agreement was the mutual acceptance of vulnerability as a way of strengthening nuclear deterrence and minimizing the risk of comprehensive nuclear war. Following the 11 September 2001 attacks and based on the belief that a number of states were about to procure long-distance missiles as well as nuclear, biological, and chemical weapons, the principle of accepting vulnerability was no longer tolerable for the US. Therefore, then president George W. Bush withdrew from the ABM Treaty in December 2001, with effect from 30 June 2002. He expressly noted at the time that this step was not directed against Russia.

The US today fundamentally rejects any relationship of mutual nuclear vulnerability, as maintained with the Soviet Union in the past, with regional nuclear challengers today. This applies, for example, to North Korea, but also to China. Options for damage limitation with regard to such powers are seen as indispensable for maintaining credible commitments to assist US allies. Therefore, missile defense has become a pillar of regional deterrence architectures for the US. Russia, on the other hand, fears the gradual development of a basically unlimited US missile defense architecture, which could undermine the Russian capability to deliver a nuclear second strike and thus Russia’s deterrence capability.

As part of the negotiations on disarmament of intermediate-range nuclear missiles in the mid-1980s, Soviet general secretary Mikhail Gorbachev had initially offered to dismantle all ground-based nuclear intermediate-range missiles in the European zone. However, the USSR had also stationed such systems in the Asian part of its territory to deter China. Since Gorbachev was determined to reach an agreement with the US, he later agreed to accept the global elimination of all land-based intermediate-range missiles as part of the INF Treaty.

Today, Russia is no longer prepared to make such concessions. For many years, Moscow has pointed out that a number of states including North Korea, India, Pakistan, and Israel are developing missiles in precisely the range spectrum in which the US and Russia had agreed under the INF

Nuclear Warheads 2018			
Country	Deployed warheads	Other warheads	Total inventory
USA	1,750	4,700	6,450
Russia	1,600	5,250	6,850
France	280	20	300
China	–	280	280
UK	120	95	215
Pakistan	–	140–150	140–150
India	–	130–140	130–140
Israel	–	80	80
North Korea	–	(10–20)	(10–20)
Total	3,750	10,715	14,465

() = uncertain figure not included in the total.
 'Other warheads' includes operational warheads held in storage and retired warheads awaiting dismantlement.

Source: SIPRI Yearbook 2018

Treaty to abolish land-based projectiles altogether. Russia views the entire nuclear arms dynamic in Asia as a threat. This may be one reason why – according to US sources – Russia is violating the INF Treaty by stationing a new land-based cruise missile system.

Both examples illustrate that in a multipolar nuclear world, the US and Russia are affected by threats that are not directly related to their mutual relationship, but emanate from third parties. As a result, bilateral treaties are being cancelled or violated. This makes it even harder to conclude new bilateral agreements: first of all because withdrawing from treaties, or, even more so, violating them means erosion of trust; and also because it has become near impossible for a bilateral agreement to take into account security concerns, which have become highly divergent within a multipolar nuclear environment, in a manner that respects the principle of parity and is satisfactory to both sides.

Beyond Nuclear

During the Cold War, it was possible to consider nuclear weapons as a relatively

isolated issue in the framework of arms control agreements. Today, nuclear weapons can no longer be negotiated separately from the subject of missile defense. Furthermore, the boundaries between the nuclear and non-nuclear domains are eroding. Finally, there are entirely new challenges, for instance in the field of cybersecurity, that were barely issues at all during the Cold War, but today have a massive impact on the strategic picture.

In his speech on the state of the nation in 2018, Russian President Putin announced that new weapons systems were being developed whose main feature was the ability to overcome the US missile defense. This showed that Russia regards the US missile defense projects as a threat to its security interests. Therefore, Russia has repeatedly made clear that it is not prepared to sign on to further nuclear arms control treaties unless they impose limitations on missile defense.

However, it is not only Russia, but also China that views US missile defense systems as detrimental to strategic stability, since it could neutralize China's nuclear deterrence capability. Even a thin defensive shield with a limited number of interceptors could suffice to intercept China's relatively few nuclear missiles. Moreover, Beijing is concerned in principle about the prospect of an arms race in space, which could have dangerous outcomes.

In addition to US missile defense technology, both Moscow and Beijing are equally worried about the US Conventional Prompt Global Strike effort, which aims at the capability to deliver long-range conventional strikes. To this end, the US is building, among other elements, modern hypersonic glide vehicles that can strike any point on the Earth's surface at an hour's notice. The goal is, for example, to thwart imminent terrorist attacks or a North Korean missile launch. While both Russia and China are working on such weapons programs themselves, they fear the US's technological superiority in this area. Both from the Russian and from the Chinese perspective, such weapons – especially when seen in the connection with the US missile defense capability – would give the US the tools to undermine Russia's and China's nuclear second-strike capabilities with early conventional, strategic precision strikes. Again, both Moscow and Beijing insist that such long-range conventional precision weap-

ons be included in arms control efforts, should negotiations ever get off the ground. At the same time, however, Washington largely views its projects to build up a Conventional Prompt Global Strike capability as being aimed at threats that are not primarily linked to Russia or China.

Another relevant development is the shifting relationship between nuclear and conventional weapons. During the Cold War, the antagonists on both sides of the Iron Curtain subscribed to the concept of an escalation ladder. In Russian strategic thinking in particular, this construct has been replaced by an integrative approach of simultaneous action across various domains. Contemporary Russian deterrence thinking is based on a mix of conventional precision weapons and nuclear arms, with both of these being regarded as strategic weapons. In doing so, Moscow is combining the strategic effect of conventional precision munitions with the deterrent effect of nuclear weapons, allowing it to elicit nuclear uncertainty in an adversary from the first minute of a conflict. Russia hopes that the adversary's resulting insecurity will strengthen deterrence and give it more options for escalation control.

Indeed, Russia is concentrating more on the development of systems for both conventional and nuclear use, such as cruise missiles and ballistic rockets. Moreover, hypersonic cruise missiles and boost-glide systems armed with conventional or nuclear warheads are equally designated for the future suppression of particularly valuable targets. Even though it will still be some time before such weapons systems are developed to maturity in Russia, the US, and other states, this trend raises the

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question of whether arms control focused on nuclear weapons still makes sense – all the more so since China also has a growing number of shorter-range missiles that mostly carry conventional warheads, but which can also carry nuclear payloads.

Finally, future cyberattacks may also have strategic qualities. In terms of their effects, Russian Defense Minister Sergei Shoigu has compared such operations to the use of mass casualty weapons. The US side, too, is aware of the significance of non-nuclear strategic attacks. Therefore, under the

Trump administration's Nuclear Posture Review, the US reserves the right to carry out nuclear first strikes in response to such attacks (cf. CSS Analysis no. 223 "[President Trump's Nuclear Posture Review](#)"). Though the text does not explicitly say so, this also refers to cyberattacks with strategic impacts. Such attacks might, for instance, be directed against early-warning systems, jeopardizing second-strike capa-

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bilities. Or they might disrupt the energy supply of one or more countries and inflict lasting damage, especially if they compromise the integrity of cooling systems for nuclear power plants or other critical infrastructures.

The increasing vulnerability of satellites, ground-based radar stations, or aircraft

used for early warning, communications, and surveillance is a matter of concern to the US, Russia, and China alike; in particular because such systems are needed both for conventional and for nuclear conflicts. This raises the specter of unwanted nuclear escalation if communications systems should be targeted in a limited conflict to suppress hostile conventional operations, since such a move would simultaneously endanger the capability to maintain a nuclear second-strike capability. The increasing importance of outer space is underscored by the US intention to establish a new service branch of the armed forces dedicated to this sphere. The aim is to sustain US dominance in space. Among the key missions would be the protection of early-warning and communications capabilities for conducting conventional, and potentially also nuclear conflicts. This development also highlights the extent to which the conventional, nuclear, and space domains of military technology are already intertwined today.

Nuclear arms control therefore faces a range of very difficult, and to some extent completely novel challenges. At the same time, the US cannot be expected to provide political leadership in this policy field for the near future. Autocratic states like Russia and China are hardly likely to fill the gap. Halting this ominous development would require a discourse on contemporary challenges to strategic stability. While nuclear second-strike capabilities are still a factor here, the context is far more complex today than it was during the Cold War: The matter is no longer limited to two actors, but involves many more parties; and non-nuclear technologies today have a far larger impact on strategic stability than was the case during the heyday of the East-West confrontation.

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