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CHAPTER 3

Transatlantic Security and the Future of Nuclear Arms Control

Névine Schepers

Russia's war in Ukraine has significantly dimmed prospects for nuclear arms control while highlighting the risks of nuclear use. With the complete overhaul of Europe's security architecture at play, arms control – particularly in the form of risk reduction measures – remains an essential political tool to prevent nuclear escalation. It can also balance the conflicting demands of strengthening deterrence and the pursuit of disarmament objectives, particularly in Europe.

An unarmed Minuteman III ICBM launches during a developmental test on 5 February 2020 at Vandenberg Air Force Base in California, United States. *Clayton Wear / US Air Force*

Nearly 60 years after the Cuban Missile Crisis, the world again faces a heightened risk of nuclear exchange as the war in Ukraine continues to unfold. Russian President Vladimir Putin has engaged in nuclear saber-rattling by threatening a nuclear response should NATO as an alliance or its individual member states intervene in Ukraine. Putin has also ordered an increase in staffing at nuclear command centers and opened the possibility of deploying Russian nuclear capabilities in neighboring Belarus.[1] Russia's full-scale military invasion of an independent sovereign nation has completely upended Europe's security environment, with far-reaching human, political, economic, and military consequences for the decades ahead. The war's outcome remains uncertain as of the writing of this chapter in late March 2022. However, it is no exaggeration to say that the events of early 2022 will be profoundly destabilizing on a global scale. This chapter will focus on the implications and prospects for nuclear arms control from a transatlantic perspective.

The nuclear dimension of Russia's conflict with Ukraine is ubiquitous, and the risk of escalation, inadvertent or intentional, cannot be ruled out. In its invasion of a non-nuclear weapon state, Russia is practicing nuclear blackmail by using fears of nuclear escalation to deter against the military involvement of NATO and its member states. Russia's actions undermine the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), damage decades of arms control work at both the bilateral and multilateral levels, and jeopardize the prospects for nuclear disarmament, non-proliferation, and arms control. Arms control alone cannot address this war when what is at stake is a complete overhaul of the European security architecture and when Russia disregards international rules, conventions, and norms in pursuing its invasion of Ukraine. Yet, arms control tools cannot be disregarded completely and may well form part of a solution.

As defined by Thomas Schelling and Morton Halperin, arms control includes "all the forms of military cooperation between potential enemies in the interest of reducing the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it."[2] Despite early hopes to the contrary, Putin did not genuinely contemplate efforts to avoid war in Ukraine, such as by reaching a potential compromise that could have included arms control measures on intermediate-range missile deployments. Such measures may still resurface as part of an end-of-war agreement. They may also form an

element of a separate track given the need to continue addressing the large US and Russian arsenals and to avoid the potential for nuclear escalation. Precedents for negotiating nuclear arms control once a war has begun are difficult to compare with the situation today. Throughout the Cold War, bilateral arms control negotiations persisted and even achieved breakthroughs despite acts of military aggression. However, the lessons learned from these negotiations cannot be easily transposed to the current crisis. The nuclear dimension in today's war is interlinked with additional political, military, and economic elements.

Arms control is an essential political tool to prevent nuclear war; without it, the world would become an even more dangerous place. Arms control measures could be used to reach a compromise in the short term, to maintain some controls on nuclear arsenals in the medium term, or to reduce the nuclear risks this war will amplify in the long term, although these are not limited to Europe. As events continue to unfold at a dramatic pace in Ukraine, it is difficult to determine the likelihood that arms control measures could be agreed on, and if so, in which possible format. However, it is a necessary exercise to think through the challenges for which arms control solutions will be required and how the United States and its European allies can develop a consistent transatlantic approach to address them.

A coordinated and complementary transatlantic approach to arms control is important. This is because of US and European resources and capabilities in this domain and the impact that a joint approach can have in addressing European security threats as well as nuclear risks at a global level. Russia's aggression has brought about a renewed sense of unity within NATO and triggered improved transatlantic coordination. Sustaining this cohesion throughout and beyond the current crisis will be key for improving European security, including when looking for de-escalation pathways, which could involve arms control measures. The altered security environment in Europe is also bound to have an impact on upcoming strategic decisions, visions for the future, and long-term plans. It will affect two key documents which are scheduled for release in 2022: the US Nuclear Posture Review, which will lay out priorities and guidelines for US nuclear policy, and NATO's Strategic Concept, which concerns NATO's broader political and military adaptation. Russia's war in Ukraine will inevitably lead to a reassessment of these and other issues, including ambitions for arms control and disarmament.

The renewal of arms control tools and initiatives should be an important part of this, and this issue should remain a focus for the United States and its allies over the long term.

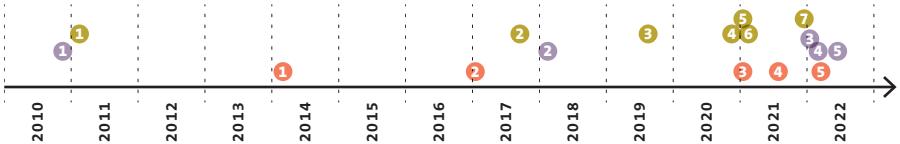
Transatlantic coordination will also be necessary when addressing strategic relationships significantly affected by China's military rise, including Beijing's position as a nuclear adversary to Washington. Indeed, for several broader arms control efforts to be relevant, China's participation in them will be required. This implies the need for better coordination between the transatlantic and transpacific theaters. Other factors also complicate the development of arms control measures. These include the increasing interlinkages between nuclear and conventional capabilities as well as the fast pace of technological innovation. Few measures have been able to preempt or match these developments and provide pathways for competition management.

A Dramatically Worsened Security Context

Russia's invasion of Ukraine comes after more than a decade of worsening strategic relations and increasing great-power competition. This situation has been enabled by the deconstruction of the post-Cold War architecture, which includes arms control frameworks. The latter formed important elements of the structure of the European security environment and the US-Russia strategic relationship. However, these arms control frameworks failed to adapt to the new challenges and rising nuclear risks posed by multipolarity – notably the rise of China – and the impact of emerging and disruptive technologies on strategic stability. Pathways for progress and efforts to address these challenges were offered by several developments. These included the investments by experts and governments in new thinking and methods in the last several years as well as a renewed political emphasis on arms control.[3] However, the situation may now have changed.

US President Joe Biden's administration emphasized the revival of arms control when it came into office. This was underlined by its immediate initiative to extend, in coordination with Russia, the New Strategic Arms Reduction Treaty (New START). This emphasis by the administration also offered some hope for positive developments in arms control, something additionally supported by its ambitions for rebuilding alliance relationships. A joint statement by the five permanent members of the UN Security Council (P5) – the nuclear-weapon states recognized by the NPT

Developments Affecting Arms Control



Treaties and agreements

1. New START (Strategic Arms Reduction Treaty) comes into force
2. Treaty on the Prohibition of Nuclear Weapons (TPNW) opens for signature
3. US withdrawal from the Intermediate-Range Nuclear Forces Treaty (INF)
4. US withdrawal from the Open Skies Treaty
5. TPNW comes into force
6. New START extension
7. Russian withdrawal from the Open Skies Treaty

Nuclear doctrine and posture

1. NATO Strategic Concept 2010
2. US Nuclear Posture Review 2018
3. P5 Joint Statement on preventing nuclear war
4. US Nuclear Posture Review 2022 *(expected)*
5. NATO Strategic Concept 2022 *(expected)*

Events

1. Russian annexation of Crimea
2. President Trump takes office
3. Presiden Biden takes office
4. Russia starts amassing troops at the Ukrainian border
5. Russian invasion of Ukraine begins

– that "a nuclear war cannot be won and must never be fought" seemed to lay the groundwork for increased and much-needed cooperation on nuclear risk reduction.[4] However, it only took a few weeks for these declarations to ring hollow given the nuclear threats articulated by Putin. Many arms control proposals presumed a working, albeit difficult, relationship between Washington and Moscow as a basis for further measures. Russia's invasion

of Ukraine has changed the situation drastically and broken decades of carefully cultivated relationships and engagement.

Within days of the full-scale invasion of Ukraine, the US-Russia Strategic Stability Dialogue was put on hold. This format was initially reinstated after the Putin-Biden summit in Geneva in June 2021 to open negotiations for a follow-on treaty to New START. This is the only remaining treaty limiting US and Russian strategic nuclear weapons and their means of delivery, and it remains in force until 2026. The halt to the main forum for discussing limits to nuclear arsenals as well other risks to strategic stability underscores the gravity of the situation. It also denies Moscow the opportunity to be seen as negotiating on something perceivable as equal terms with Washington while it wages a war in a neighboring country.

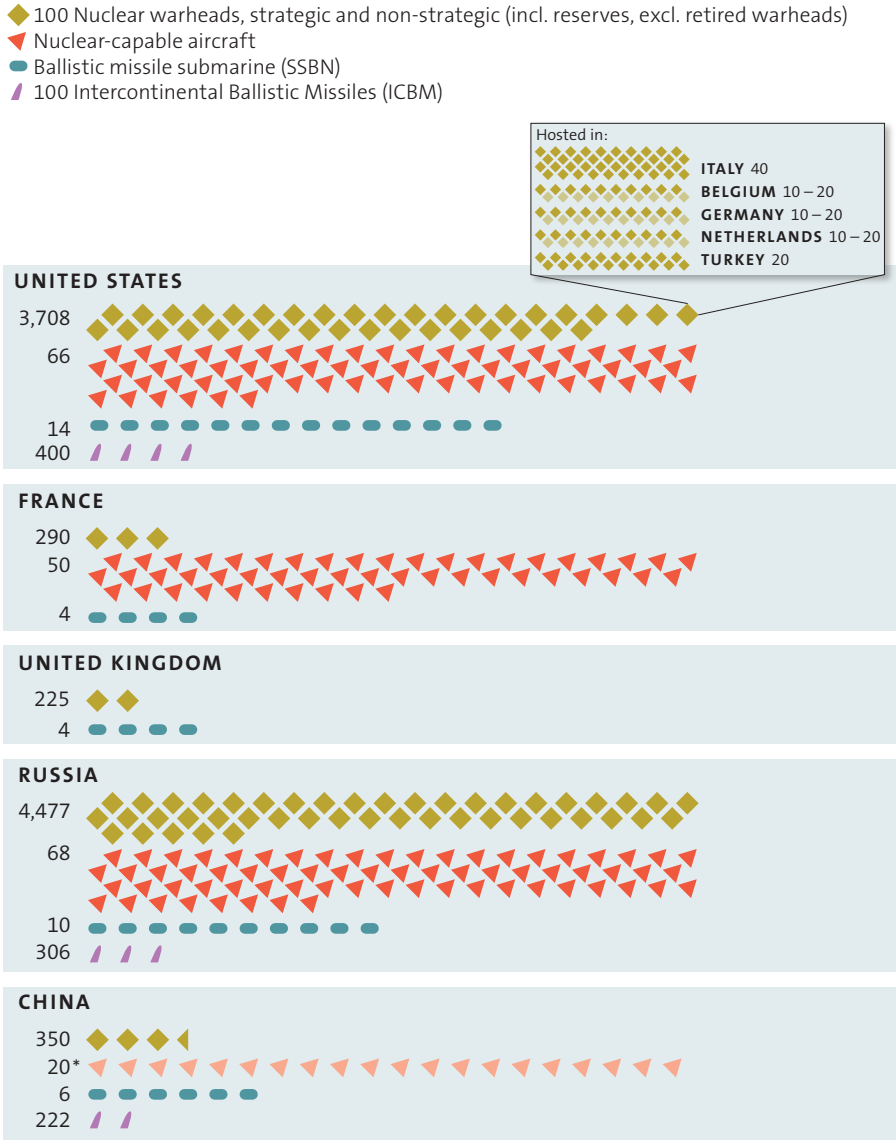
Under the current circumstances, it does not seem feasible that the United States and Russia could negotiate a treaty. Russia's months-long build-up of troops at the border with Ukraine ultimately suggests that Moscow could not have been swayed from its decision to invade. Indeed, any Russian diplomatic engagement in the run-up to the invasion, including potential arms control offers, may have been a façade.

It is unlikely that the US Senate will ratify a treaty with Russia in the near future given current events. The present situation only adds to concerns about past acts of Russian non-compliance such as the deployment of a prohibited missile that caused the collapse of the Intermediate-Range Nuclear Forces (INF) Treaty. Yet the nuclear arsenals at stake remain enormous, and discussions under the strategic stability dialogue only started to address issues beyond maintaining New START restrictions. Before the United States halted the talks, Washington's priorities were focused on limiting new kinds of intercontinental-range delivery systems such as the new strategic weapons that Russia has been developing and deploying. They also focused on integrating non-strategic warheads in any kind of agreement, as Russia retains a vastly superior arsenal of such weapons.[5] These non-strategic warheads, so-called tactical nuclear weapons, refer to weapons designed for use in battlefield situations and which have a shorter range. Russia has nearly 2,000 of these. Their large number, exclusion from past and present treaties, and the lack of transparency regarding their role have long been an issue in US-Russian nuclear negotiations.[6]

In contrast, Russian priorities centered mainly on missile defense and

NPT Nuclear Weapon States' Capabilities

Approximated



Note: Short- and intermediate-range ballistic missiles as well as nuclear-capable cruise missiles are not shown on this graph.
* The Chinese People's Liberation Army Air Force has been re-assigned a nuclear mission since 2018. However, the number of aircraft assigned to that mission is unclear.

Source: Federation of American Scientists, SIPRI, Fondation pour la Recherche Stratégique

were framed around a "new security equation approach" that would include all weapons, both offensive and defensive, affecting strategic stability. Russian concerns also included non-nuclear high-precision strike weapons and space-related capabilities. In draft treaties that it sent to the United States and NATO in December 2021, Russia stressed its desire for an end to NATO nuclear sharing agreements and a ban on short- and medium-range missile deployments.[7] Neither treaty proposal offered realistic options for engagement in negotiations, and both are now void. However, US responses initially envisioned potential discussions about an arms control agreement. Such discussions would have addressed the gap left by the defunct INF Treaty by placing limits on ground-based intermediate- and shorter-range missiles and their launchers, as well as reciprocal transparency mechanisms at NATO missile defense sites and selected Russian missile bases.[8] While such discussions are off the table for now, they may resurface depending on how Russia's aggression against Ukraine ends.

Other Challenges to Arms Control

The end of the INF Treaty, while rooted in Russian non-compliance, also reflected US concerns regarding China. China's nuclear arsenal and range of systems, including ground-launched intermediate-range missiles, have steadily expanded. This development was spurred on by Chinese President Xi Jinping's call to "accelerate the construction of advanced strategic deterrent" capabilities.[9] Thus, China's inclusion in arms control negotiations reflects a key challenge for the future of nuclear arms control. Indeed, this challenge appeared to be the dominant one facing arms control prior to the events in Ukraine. It may now prove more difficult to address.

Beyond the modernization of its nuclear forces, Beijing is constructing hundreds of new ballistic missile silos, developing and deploying dual-capable missiles, and diversifying its nuclear delivery platforms. China is also reportedly increasing its stockpile of nuclear warheads.[10] These developments, coming from a state that has traditionally emphasized a minimalist nuclear posture, are concerning for the United States and its allies in the Pacific. This is particularly the case given the lack of transparency regarding China's nuclear capabilities and the absence of relevant crisis management mechanisms or comprehensive strategic dialogue. Moreover, China's aggressive rhetoric toward Taiwan creates fears that a conflict over the island could include a nuclear dimension should a conventional conflict with the United States escalate.

Developing arms control measures that include China has become even more difficult now given the increased public alignment between China and Russia. While China has been cautious in its reaction to Russia's invasion of Ukraine, both states have sought to strengthen their partnership. For example, this was reflected in a joint statement delivered in early February 2022, in which Beijing adopted Russia's language opposing NATO enlargement and both countries called for Washington to agree to Moscow's proposal for a moratorium on intermediate-range missiles in Europe.[11] This latter proposal effectively dismissed any initiatives that would seek to broaden negotiations on such missiles to include China. The statement also called for the withdrawal of US nuclear weapons stationed in Europe; pressed for the termination of missile defense systems; and denounced the trilateral security partnership formed by Australia, the United Kingdom, and the United States (AUKUS) as something that increases the chances of nuclear proliferation and a regional arms race in the Asia-Pacific.

Russia and China's increased mutual support for each other's key positions in the areas of arms control, non-proliferation, and disarmament may complicate US attempts to develop a separate bilateral strategic stability dialogue with China. For now, such a dialogue is only under consideration by Beijing.[12] Regardless, Sino-Russian cooperation will require US allies in Europe and in the Asia-Pacific to improve coordination with one another. China has long stated that it will not join arms control discussions until the United States reduces its nuclear arsenal to the size of China's.[13] With the US-Russia Strategic Stability Dialogue talks halted for an undetermined amount of time, China may continue to use this argument as a shield to avoid deeper discussions on nuclear capabilities. However, nuclear escalation risks highlighted by the war in Ukraine may open more space for engagement on crisis management and risk reduction measures with China. These are areas to which the United States and its allies in Europe and the Asia-Pacific can all make contributions.

Finally, debates regarding the future of arms control have increasingly turned to the potential impact of emerging and disruptive technologies on strategic stability and nuclear forces. This has involved an examination of how to integrate such technologies in arms control solutions. These non-nuclear technologies include dual-use capabilities developed in the fields of Artificial Intelligence (AI), space, robotics, and cyber. They also include conventional military technologies such as missile

defense systems and precision-guided weapons. Few measures exist beyond some export control mechanisms to limit most of these technologies, and none are currently in place to address their impact on nuclear risk.

Revived Transatlantic and European Unity

Russia's invasion of Ukraine has been met with a swift and collective NATO response and a united transatlantic front. Prior concerns about US commitment to European security or French aloofness from NATO have been dispelled for now.

There has been a striking change in the tone of transatlantic relations since the invasion. Only a few months before the war in Ukraine, the Biden administration was under fire for its failure to coordinate with its allies on issues including the withdrawal from Afghanistan and the diplomatic mismanagement surrounding the creation of AUKUS. The state of transatlantic unity has also set aside debates surrounding a potential adoption by the United States of a sole purpose policy, which was under consideration for inclusion in the 2022 Nuclear Posture Review. The suggested policy reflected Biden's ambition to reduce the role of nuclear weapons in US defense strategy. More specifically, the policy would state that the sole purpose of US nuclear weapons is to deter and, if necessary, respond to a nuclear attack against the United States or its allies. The language of this suggested policy was met with pushback given fears among European and Asian allies. They were concerned that if adopted, the policy could weaken deterrence, undermine security guarantees, and encourage nuclear-armed adversaries to engage in non-nuclear aggression.[14] These concerns have only become more acute since Russia embarked on its military invasion of Ukraine, making it unlikely that the United States will adopt a sole purpose policy any time in the foreseeable future.

At a political level, the EU has displayed surprising levels of unity and speed by agreeing on exhaustive sanctions, aid packages, and a response to the Ukraine refugee crisis. The crisis has highlighted improved coordination at the European level, particularly through the Weimar Triangle format that brings together France, Germany, and Poland.[15] The situation is similar at the transatlantic level, which notably featured constant communication among French President Emmanuel Macron, German Chancellor Olaf Scholz, and Biden.

The crisis has also called attention to the renewed leadership from Berlin and Paris. For instance, Berlin's

decision to increase defense spending significantly and its agreement to deliver arms to Ukraine have upended decades of foreign and defense policy. Other notable developments from Germany involve a renewed commitment to NATO nuclear sharing – which already featured in the new government's coalition agreement – and the decision to purchase US F-35 fighter jets, which were also selected previously by other nuclear sharing states such as Belgium, Italy, and the Netherlands.[16]

French actions during this crisis, including those within NATO and through its maintenance of communication channels with Putin, may help to set aside concerns that France would give preference to European strategic autonomy at NATO's expense. In the past, France's attempts to push for Euro-centric defense initiatives and sovereignty have often aroused concerns among other European NATO states that this could weaken the transatlantic alliance and cohesion. However, in response to Putin's nuclear saber-rattling, French Foreign Minister Jean-Yves Le Drian raised the fact that NATO is a nuclear alliance.[17] Given that France does not take part in NATO nuclear planning and sharing arrangements, this sent a strong signal that there is full alignment between the deterrence positions of France and NATO. This development may also lead, in time, to further discussions on closer coordination between France and NATO on nuclear planning and sharing arrangements or a broadened role for the French nuclear deterrent in European security.

The war in Ukraine will have significant implications for Europe, including Russia. They will involve the role that nuclear weapons, deterrence, and arms control play in the crisis. In order to consider these implications and what they will mean for regional and global security, the transatlantic community will need to remain unified.

Reinforcing Deterrence and Disarmament Trends

In Europe, two trends were apparent before the Russian invasion of Ukraine: increasing support for nuclear deterrence and further pressure for nuclear disarmament. Both trends are likely to be reinforced by the war and the prevalent role played by nuclear weapons in the conflict.

The first trend has been more apparent in Central and Eastern European states, which have long sought to strengthen NATO's deterrence posture in light of weaknesses in their conventional forces and Russian assertiveness. As the latter has morphed into a full-scale war on NATO's borders, the threat of conflict is at its

highest level since the end of the Cold War. The necessary response for most allies – and particularly those in the East such as Poland, Lithuania, Latvia, and Estonia – will be to enhance both conventional and nuclear deterrence. Given that Eastern European concerns about Russia have been proven right, NATO's upcoming Strategic Concept will need to reflect a strengthened deterrence posture.

Deployments of US INF-range conventional missiles to Europe may no longer be as contentious as they once were. Such deployments were already being debated prior to Russia's invasion of Ukraine, although more prominently in the Asia-Pacific theater. They were also considered to be a way to close the deterrence gap with Russia, as well as potential bargaining leverage.[18] However, deployments of such missiles to Europe would inevitably entail increased escalation risks, as Moscow would view them as a grave threat. An escalatory Russian response may involve the deployment of Russian nuclear weapons in Belarusian territory, which is now possible following the recent change in the constitution of Belarus.[19]

Moscow's war in Ukraine will make arms control even more politically difficult, as NATO allies will likely face internal disagreements on which compromises are possible. Any action or signal that could be interpreted as undermining the credibility of deterrence could become contentious. At the same time, enhancing deterrence without any arms control mechanisms in place poses risks to stability. Increasing the salience of nuclear weapons and deterrence, given the risks of nuclear escalation, could also heighten anti-nuclear sentiment among European publics.

This leads to the second trend: stronger support for nuclear disarmament. Given the terrifying ease with which Putin has raised the possibility of nuclear weapon use, European and global publics are understandably concerned. In the last decade, European public debates on nuclear issues have varied significantly from country to country, often depending on world events or the political makeup of coalition-based governments. Many NATO states are generally content not to engage with their constituents on thorny issues such as nuclear hosting or dependence on extended deterrence. However, recent events are shining a light on the devastating consequences of any form of nuclear use. These include renewed fears of nuclear war and concerns that Putin could break the taboo of nuclear use in a "limited" manner by using nuclear weapons on Ukrainian territory.

Moreover, given the risks of nuclear escalation, the United States and NATO ruled out direct military responses to the war in Ukraine early on, limiting their scope of action. This has highlighted the role that nuclear coercion can play as a tool and the impunity with which Russia has been able to pursue a conventional war while using nuclear deterrence as a shield.

Prior to the war, hopes for progress on nuclear disarmament were already fading. This position has also been reinforced by the fact that all nuclear powers have undertaken long-term nuclear modernization programs. Such developments have further polarized states party to the NPT, with nuclear weapon states and those that benefit from their protection becoming increasingly divided from the treaty's other members. Disillusionment with the lack of progress on disarmament has led to a strengthening of the nuclear abolitionist movement. This is structured around the Treaty on the Prohibition of Nuclear Weapons (TPNW), which entered into force in January 2021. In Europe, divisive and heated public discussions surrounding the TPNW continue. In part, the nature of this debate results from how treaty proponents take aim at the practice of nuclear deterrence and consequently increase pressure on NATO states.[20] Popular support for the TPNW, or at least the ideals it aspires to, has been growing. This has been illustrated by commitments by political parties and local governments to the treaty as well as debates regarding potential accession in national parliaments. Civil society organizations that support the TPNW are now seizing upon Putin's nuclear threats and the prospect of potential new missile deployments. They suggest these developments clearly demonstrate why states should sign the treaty.[21]

The war will likely continue to emphasize these different interpretations of the value and risks posed by deterrence and nuclear weapon possession. Yet, in the absence of significant commitments by Russia as well as China to arms control and disarmament objectives, the TPNW makes little sense for NATO states. Indeed, they perceive their membership in the nuclear alliance as a bulwark against Russian aggression. Still, addressing the deterrence and disarmament debates will be essential given the catastrophic consequences that any form of nuclear use would generate. Moscow's doubling down on nuclear coercion as a seemingly viable strategy requires the transatlantic community to reassess how to address such threats.

The repercussions of Russia's actions on the NPT regime should also not be underestimated. By invading Ukraine,

Russia has blatantly violated the 1994 Budapest Memorandum. Under this agreement, Ukraine, as well as Belarus and Kazakhstan, acceded to the NPT as a non-nuclear weapon state after transferring nuclear weapons – inherited after the break-up of the Soviet Union – to Russia. In exchange, Russia, the United Kingdom, and the United States provided Ukraine with security assurances, including to respect its independence and sovereignty. Russia's invasion of Ukraine, a non-nuclear weapon state, and its nuclear threats to deter others from intervening have cast a dark shadow on the NPT regime, including its two-tiered system.

A Shrinking Space for Arms Control

The opposing trends that show shifts toward strengthening deterrence and calls for disarmament leave little space for arms control. Despite arms control's adaptation challenge, de-escalation pathways remain necessary in the near term, as do crisis management and communication tools. In the long term, the war in Ukraine also highlights the need for more arms control, better prevention mechanisms, and reduced incentives for escalation. Opportunities for developing these will depend on the outcome of the war for Ukraine, the evolution of Europe's security architecture, possible compromises reached with Moscow, and the fate of Russia as its war in Ukraine unfolds.

At the transatlantic level, NATO is the traditional forum for discussions on arms control. It will also likely remain so, providing an important institutional framework for discussion and coordination on arms control positions, whether conventional or nuclear, through different consultative bodies. Historically, NATO's approach to arms control has been defined by two key moments. The first was the publishing of the 1967 Harmel Report, which formally endorsed a "two-track" policy of deterrence and détente. The second was the 1979 "dual-track decision," which took place during a period of high tensions with the Soviet Union. This decision involved NATO committing not only to arms control engagement efforts but also the modernization of its deployed intermediate-range missile forces, with the possibility in mind that the negotiations could fail. The latter eventually led to the negotiation and signing of the INF Treaty. The current crisis will become the next defining moment for the alliance, including in terms of how it will seek to approach arms control.

Balancing deterrence with arms control is a constant political and military exercise within NATO, although the scales have often tipped toward emphasizing deterrence. This is likely to be the case for the coming months

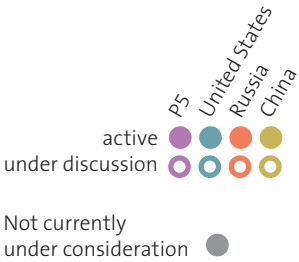
and years as well given Russia's actions. The continuation of a dual-track approach seems no longer feasible for now, yet arms control should not be dismissed. Nor should it be used as the rhetorical box ticking exercise it has sometimes become in efforts to balance against increased references to strengthening deterrence. An overreliance on deterrence presents risks and few opportunities for negotiating with Russia. Such negotiations remain necessary given Europe's geography and the responsibility states have to prevent nuclear war. These cannot be guaranteed by deterrence alone. Without mechanisms for dialogue and restraint, instability will remain and will become impossible to manage.

NATO can also pursue arms control objectives in other ways. For instance, it has a role to play as a repository for historical arms control knowledge, especially in Europe. Initiatives for emerging experts and the research work provided by NATO Defense College are among the ways that it furthers this goal. NATO has also developed expertise on emerging and disruptive technologies and their potential impact on military forces. These technologies pose numerous nuclear risks. Thus, addressing their impact on nuclear deterrence is a major area of research on both sides of the Atlantic. Tackling the possible impact of such technologies on deterrence is also at the heart of efforts to adapt arms control. NATO currently focuses on promoting the development of dual-use technologies to "strengthen the Alliance's edge" and on exchanging best practices to protect its member states against threats.[22] Most technology areas prioritized by NATO, such as AI, autonomy, hypersonic technologies, and space, are also relevant for deterrence and arms control. Given its weight, resources, and reach, NATO could further focus on exploring these technologies from the perspective of arms control as well.[23]

Risk Reduction as a Pathway Forward

The war in Ukraine has dashed hopes for achieving formal arms control agreements in the foreseeable future. It has also emphasized the urgent need for more effective risk reduction measures. The purpose of such measures is to reduce the risk of intentional or unintentional nuclear weapon use. These measures focus on elements such as declaratory policy; improving mutual understanding and transparency; establishing crisis management and communication tools; and taking preventive measures to decrease the likelihood of accidental use.[24] While they often take the form of political commitments rather than legally binding frameworks,

Examples of Nuclear Risk Reduction Measures



Sources: UNIDIR, European Leadership Network, Clingendael

these measures still form an integral part of arms control. They have been increasingly highlighted as a pathway forward given existing challenges.

An inherent issue for risk reduction is that states have different interpretations of what constitutes risk. A source of risk for one state can be perceived as the solution for alleviating risk for another. A measure to reduce risk for one state may increase risk for another. Missile defense systems are representative of this dilemma. Given

the current context regarding the war in Ukraine, risk reduction measures aimed at improving transparency and communication should be a priority for the United States, NATO and its member states, and Russia, as should raising the threshold for nuclear use. Hotlines exist between the United States and Russia as well as between NATO and Russia. There is also the US-Russian Nuclear Risk Reduction Center. Ensuring that these instruments remain up to the task in the context of a Russian war with a country that neighbors NATO states should be a priority. A related priority for the United States here would be the building of these tools with China, given that few currently exist.

Discussion and coordination formats such as the Stockholm Initiative and the P5 process have increasingly focused on nuclear risk reduction measures. The Stockholm Initiative notably brings together 16 non-nuclear weapon states from different groupings. These states include US allies such as Germany, the Netherlands, South Korea, and Japan; non-aligned states like Switzerland; and TPNW member states including New Zealand and Mexico. The initiative coordinated a nuclear risk reduction package for review and adoption at the upcoming NPT Review Conference, which would anchor the development and implementation of risk reduction measures as a process within the NPT regime.[25] The P5 process also started discussing risk reduction, particularly after the format was revived in 2018. It has served as one of the few forums for engagement among NPT nuclear weapon states, and it has helped to foster discussion on nuclear policy and doctrines, particularly with China.

The war in Ukraine will have a detrimental impact on the NPT regime, which was already under stress from many sources. The future of the P5 process is uncertain, as the space for diplomacy with Russia in most other multilateral forums continues to shrink. Most risk reduction measures require P5 implementation. However, others could also involve NATO states to a certain extent, notably including some measures which fit under the scope of improving mutual understanding. Nuclear risk reduction is mainly the responsibility of nuclear-weapon states, yet their failure to reduce risk has consequences for everyone. This point has been strongly underlined by debates surrounding the potential use of nuclear weapons in the war in Ukraine. Polarization between states supporting disarmament and deterrence will likely increase as a consequence of the conflict in Ukraine, creating a further need for constructive engagement

between both communities. Exchanges between nuclear weapon states and non-nuclear weapon states could support the development of effective risk reduction mechanisms with broader international endorsement. This would especially be the case for states that are invested in risk-reduction progress and that attempt to work as bridge-builders between more skeptical pro-disarmament states on the one hand and nuclear weapon states and their allies on the other. While the TPNW's approach to disarmament is at odds with NATO's deterrence policies, such arms control measures offer some middle ground in what is often an otherwise inflexible debate.

It will be difficult to ensure that most forums for engagement and negotiation remain fit for purpose and that they will be structured in a way that can deliver results. The breakdown in US-Russia relations creates further complications, with multilateral forums such as the NPT Review Conference, the Organization for Security and Cooperation in Europe (OSCE), and the Organisation for the Prohibition of Chemical Weapons at risk of being held hostage to developments in Ukraine. Nuclear arms control depends to an even greater degree on the health of relations between Washington and Moscow. Thus, the adaptation and multilateralization of related processes to increase the inclusion of China and address the impact of emerging and disruptive technologies is presently becoming more challenging.

Nuclear arms control has no dedicated multilateral forum in the way that non-proliferation does with the NPT or conventional arms control does with the OSCE. To contribute effectively to nuclear arms control, states need to undertake efforts to coordinate among different forums and to maintain the necessary national infrastructure that can support arms control efforts. Therefore, the development of a transatlantic approach to arms control also has to start in national capitals, by further investing in the supporting arms control infrastructure. This includes the intellectual capital, engagement mechanisms, and institutional frameworks that contribute to the generation and implementation of ideas.[26] This is not just the purview of Washington, Paris, or Berlin. Instead, it should be a responsibility for all states that have a role in contributing to European security, something which has gained even greater significance following the invasion of Ukraine.

A Somber Outlook

Russia's war in Ukraine has upended the post-Cold War security order in a definitive and irreversible manner. It

already has had, and will continue to have, devastating consequences at multiple levels that will last for years. Its negative impact on the future of arms control and the impetus that it provides for future arms races are but two terrible repercussions of Putin's decision to invade. The nuclear dimension of this conflict will also inevitably lead to greater debates about the utility, use, and risks of nuclear weapons and deterrence, especially when these are unrestricted by arms control. While arms control agreements may be out of reach for now, nuclear risk reduction can perhaps lessen some of the more extreme threats. It may also be considered as a way to address issues of transparency and misperception involving China's nuclear forces. This will all require the United States and European nations to continue to coordinate and invest in arms control solutions.

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