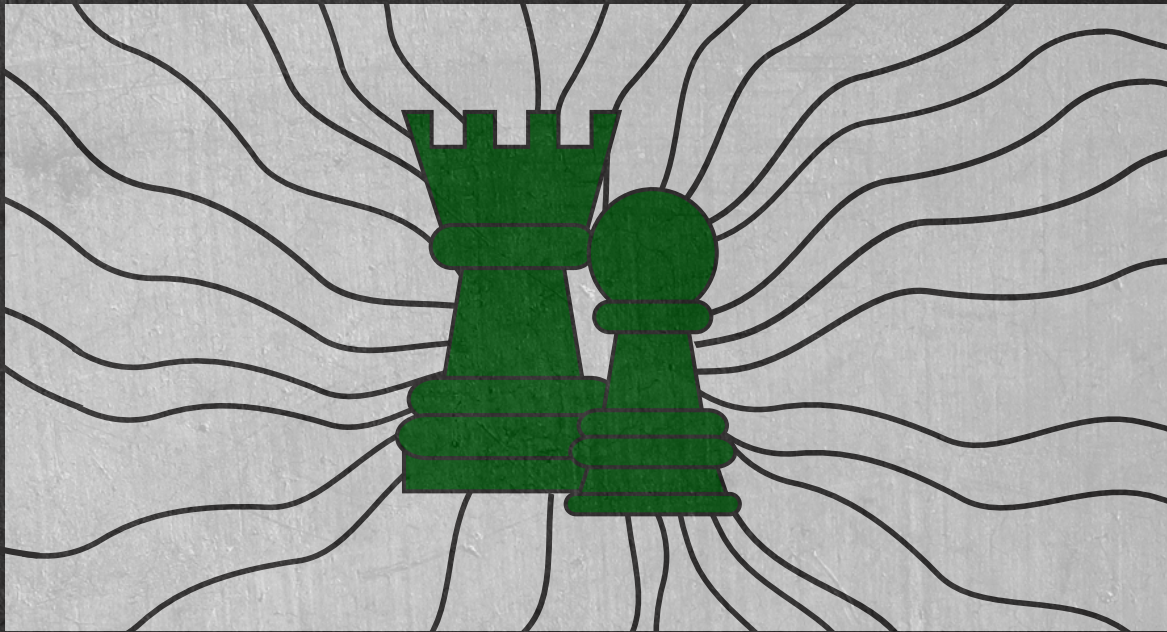


Some Thoughts on
**THE LOGIC OF STRATEGIC
ARMS CONTROL**



Three Perspectives

**LEWIS A. DUNN, ANDREY BAKLITSKIY
& TONG ZHAO**

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FOREWORD

Virtually from the first days of the atomic age, national leaders, experts, and publics have grappled with how to prevent the devastation and loss of human life that could be brought about by nuclear weapons. Pursuit of nuclear disarmament to rid the world of nuclear arms and reliance on nuclear deterrence to prevent their use soon emerged as two approaches. Both approaches have been complemented by what became known as non-proliferation and, somewhat later, by bilateral and multilateral arms control. Over the decades, these evolving approaches have woven in and out of national and international efforts to deal with the existence of nuclear weapons. Many States have drawn on and adapted strands of all these approaches in formulating their national policies. How nuclear disarmament, nuclear deterrence, non-proliferation, and arms control have interacted has varied—at times being more cooperative, at times more confrontational.

More recently, there has been intensified and frequently contentious debate about how much emphasis to place on reliance on nuclear deterrence and on pursuit of nuclear disarmament in today's security environment. In parallel, there is mounting competition, deepening mistrust, and assertive nationalism among nuclear-armed States. New centres of power, major power rivalries, new technologies, and new domains of strategic competition are emerging. The risk of use of nuclear weapons, particularly from an escalating conventional conflict, is a cause of international concern. Long-standing bilateral and arms control efforts are ending or are endangered. And, for decades now, multilateral nuclear arms control and disarmament efforts have largely been at an impasse.

Renewed dialogue at many levels is urgently needed to address these dangers.

Renewed dialogue at many levels is urgently needed to address these dangers. In July 2020, UNIDIR initiated the Disarmament, Deterrence, and Strategic Arms Control (DDAC) Dialogue. Bringing together a small but diverse group of policymakers, experts, and civil society representatives on a not-for-attribution basis, it focuses on exploring the relationships and interactions among nuclear disarmament, nuclear deterrence, and strategic arms control in today's world. The initiative aims to help bridge today's nuclear divide and renew global cooperation by identifying

shared goals and interests as well as opportunities to recraft strategic arms control in the twenty-first century and contribute to re-energizing the pursuit of nuclear disarmament. As such, it is intended to complement the Secretary-General's *Agenda for Disarmament*, launched in Geneva on 24 May 2018.

The DDAC Dialogue was launched amid the Covid-19 pandemic, which has created major obstacles to face-to-face meetings and international travel. It led UNIDIR to experiment with new ways of promoting substantive, worthwhile expert interaction. To that end, this paper on the logic of strategic arms control represents the evolution of a bullet-point paper UNIDIR asked Lewis Dunn, Andrey Baklitskiy, and Tong Zhao to prepare for a session of UNIDIR's Dialogue in late November 2020. The paper outlines some US, Russian, and Chinese perspectives on arms control prompting further, written commentary from invited commentators. This paper complements papers in the Dialogue that UNIDIR published earlier, including by George Perkovich on the logic of nuclear disarmament and by Tanya Ogilvie-White on the logic of nuclear deterrence; these papers also include commentary.

Beside stimulating a fruitful discussion for the purposes of the DDAC Dialogue, we and the DDAC participants believe this paper, as part of UNIDIR's ongoing nuclear dialogue series, is of broader, public interest in stimulating thinking about the future of arms control. The various perspectives expressed in the Dialogue offer insights that can help efforts to recraft Cold War bilateral arms control for the situation of today and tomorrow. Like the earlier papers, it is an exploratory, not comprehensive, treatment of themes. It should also be noted that the comments on this paper, which are reproduced with permission of the commentators, were informal contributions responding to earlier drafts rather than the latest, published versions. Nevertheless, these comments are included because they contain valuable insights into ways to address the dilemmas of nuclear weapons at the current time, including the breadth of perspectives involved.

John Borrie
UNIDIR

Lewis A. Dunn





THREE PERSPECTIVES ON THE LOGIC OF STRATEGIC ARMS CONTROL

This essay was prepared to help frame discussion in the UNIDIR Disarmament, Deterrence, and Strategic Arms Control Dialogue. It explores the logic of strategic arms control defined to include not only nuclear weapons but also capabilities in those domains directly impacting nuclear relationships such as missile defences, space, cyber, artificial intelligence, and conventional strike.¹ As with the two earlier papers prepared for the UNIDIR dialogue,² it focuses on five questions:

- Who are the proponents of strategic arms control?
- Why do arms control proponents advocate it?
- What are the major assumptions of proponents of strategic arms control?
- What are the important uncertainties of arms control?
- What is the relationship between strategic arms control and nuclear disarmament and nuclear deterrence?

In exploring these questions, the format of this paper differs slightly from that of prior publications in the UNIDIR Dialogue series. It offers personal reflections from three perspectives. Specifically, for each question, Lewis Dunn first sets out his perspective to be followed directly by the perspective and commentary of his co-authors, Andrey Baklitskiy and Tong Zhao. Nevertheless, like two of the previous papers on the logics of nuclear disarmament and nuclear deterrence respectively, the second part of this paper includes comments on the views expressed in the first part from other participants in the UNIDIR Dialogue.

1 For example, interceptor missiles, cyber and electronic capabilities and directed-energy weapons can undermine rivals' space and missile capabilities; conventional weapons can perform some missions once reserved for nuclear weapons (e.g., targeting early warning systems and nuclear command, control and communications); technological advances (such as remote sensors, electronic barriers and AI-enabled 'exquisite awareness') may permit more effective tracking of nuclear forces. See John Borrie, *Strategic Technologies*, Nuclear Weapon Risk Reduction Policy Brief no. 2, UNIDIR, 2020, <https://unidir.org/publication/strategic-technologies>.

2 See George Perkovich, *The Logic of Nuclear Disarmament*, Nuclear Dialogue Series Paper 2, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/DDAC/02>, and Tanya Ogilvie-White, *The Logic of Nuclear Deterrence: Assessments, Assumptions, Uncertainties and Failure Modes*, Nuclear Dialogue Series Paper 3, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/DDAC/03>.

WHO ARE THE PROPONENTS OF STRATEGIC ARMS CONTROL?

LEWIS DUNN:

The concept of arms control originally emerged in the late 1950s and early 1960s as a means to regulate the nuclear relationship of the United States and the Soviet Union.³ In the decades since, the diverse proponents of strategic arms control have included officials and military personnel in nuclear-armed countries, their allies, and still other countries; think tank experts in nuclear-armed, allied, and still other countries; officials in regional and international institutions; and representatives of civil society. At the same time, at both the individual and the governmental level, there always have been critics or skeptics of the feasibility, desirability, and applicability of arms control. Increasingly, many proponents of more rapid progress toward nuclear disarmament also have criticized arms control, in particular, for its implicit focus on managing, not replacing, nuclear deterrence.

ANDREY BAKLITSKIY:

At the State level, only two of the nuclear weapons States—the Russian Federation and the United States—have ever participated in strategic arms control, with others being reluctant to engage in it. Among the non-nuclear weapons States you often see consistent support for arms control from those that have no direct stake in a possible conflict between nuclear peers but could be negatively affected by such a conflict. However, if a State feels particularly threatened by the other side in a nuclear stand-off, it will only consider arms control among many other options for managing a conflict (and it might not be the top choice).

Only two of the nuclear weapons States—the Russian Federation and the United States—have ever participated in strategic arms control.

— ANDREY BAKLITSKIY

At the individual level you can see proponents of strategic arms control in all the segments of society, from the general public to politicians and from academia to civil service. It seems to be the case that, within governments, career officials at the defence and foreign ministries working on the arms control portfolio are its consistent supporters. It is also the case that support for nuclear disarmament often correlates with support for strategic arms control. While some in the disarmament community might dislike arms control for a number of reasons, they seldom call to leave existing arms control treaties or oppose the conclusion of new ones.

It is also important to note who does not count as proponents of strategic arms control even if they sometime use the same discourse. Individuals demanding the other side to make excessive concessions, not willing to consider any trade-offs, and pushing for ever increasing and unrealistic levels of verification most probably are just using the guise of arms control to undermine it.

³ The two most seminal works on arms control remain Donald G. Brennan, *Arms Control, Disarmament, and National Security*, 1961, and Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control*, 1961. For an excellent and comprehensive history of the evolution of arms control from its origins to today, see Michael Krepon, *Winning and Losing the Nuclear Peace: The Rise, Demise and Revival of Nuclear Arms Control*, forthcoming 2021. I read and commented on this work in draft as the chapters were crafted. Though I have not reconsulted those chapters in writing this piece, Michael Krepon's analysis undoubtedly helped sharpen my thinking on arms control and I would like to acknowledge as much here.



TONG ZHAO:

Despite traditional suspicion about the sincerity and intentions of the so-called superpowers in their negotiation and implementation of arms control agreements, Chinese government officials and policy experts in general acknowledge the positive role that arms control has

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— TONG ZHAO

played in contributing to stability. It may be useful to note that in many countries there has been very little civil society discussion (let alone promotion) of arms control, a topic that rarely makes it into public discussions or even policy debates within the expert communities. In such countries, there are no obvious proponents of arms control.

WHY DO ARMS CONTROL PROPONENTS ADVOCATE IT?

LEWIS DUNN:

A variety of reasons are put forward in support of strategic arms control. These reasons are not mutually exclusive and may apply to different degrees in relationships among specific pairs or triangles of nuclear-armed States. Different individuals and States frequently affirm many of them. Some of these reasons likely are more compelling than others, whether generally or in specific geopolitical situations. In addition, as stressed below in the discussion of assumptions, the concept of arms control encompasses a very wide range of approaches in pursuit of these purposes, not simply formal, legally binding treaties. Let us briefly consider each of these reasons.

Stability

From its origins in the 1960s, limiting certain military capabilities and options by strategic arms control has been seen as a means to *enhance strategic stability* among adversarial nuclear-armed States. Two different aspects of strategic stability are at issue. On the one hand, arms control proponents view arms control as a means to enhance what is termed *first-strike stability*, that is ensuring that neither side in an adversarial relationship of nuclear-armed States believes that its nuclear deterrent is vulnerable to a surprise nuclear first strike by the other side. By placing limits on the deployment of missile defences, for example, the 1972 US–Soviet Anti-Ballistic Missile Treaty (ABM Treaty) is widely regarded as having served this purpose. On the other hand, arms control agreements are seen as a means to strengthen what is termed *crisis stability*; that is, avoiding a situation in which, in a crisis or ongoing military conflict, striking first with nuclear weapons would become the least-bad alternative for nuclear-armed adversaries or could otherwise occur due to miscalculation, misinterpretation, and accidents/incidents. The US–Soviet Union/Russian Federation and US–China agreements on crisis communications exemplify measures to enhance crisis stability.

The concept of first-strike stability, however, may not be applicable in all relationships among nuclear-armed competitors. There also are broader and narrower concepts of strategic stability, with some States factoring into the equation the overall state of political relationships, mutual trust, and other contextual considerations. The US–China strategic relationship exemplifies both points with, on the one hand, China’s lack of a first strike capability against the United States and, on the other hand, China’s less technical view of strategic stability.

Support for strategic arms control also rests on the proposition that it can help to *manage disruptive technological/military changes* impacting strategic relationships. For three decades, the 1972 ABM Treaty did so, preventing the emergence of nuclear offence–defence competition between Washington and Moscow. By contrast, the absence today of limits on US deployment of new technologies for missile defences contributes to Russian and Chinese pursuit of new technology options to buttress their respective nuclear deterrence postures.

Arms control’s potential contribution to managing potentially disruptive technological and military changes, however, depends on adversaries’ readiness to forgo such technologies as well as the feasibility of identifying/agreeing to workable constraints. The initial development, testing, and deployment in the late 1960s and 1970s of multiple independently re-entry vehicles (MIRVs) on ballistic missiles by the United States and the Soviet Union exemplifies the difficulties: MIRVs were seen as working the military problem of assured retaliation in each State; technical challenges of any agreement were high, including verification; both States

deployed MIRVs; and as a result, numbers of deployed nuclear weapons jumped to a new plateau without either side gaining a significant advantage if not actually finding themselves in a less stable situation in terms of first-strike stability.

A closely related point is that proponents of arms control argue that it can help to avoid nuclear arms racing between nuclear-armed adversaries, often labelled *arms race stability*. It is seen as doing so by increasing mutual predictability and lessening concerns that an adversary's actions are eroding mutual nuclear deterrence. As a result, the scope and magnitude of unilateral national actions to sustain a nuclear deterrence posture may not need to be as comprehensive.

Although the record is mixed, on balance increased predictability probably did help to dampen US–Soviet nuclear competition. Today, with modernization of US, Russian, and Chinese nuclear forces underway, the emergence of new technologies with uncertain impacts on the nuclear deterrence postures of all three States, and competition underway in new domains of advanced conventional weapons, space, and cyberspace, arms race stability is particularly important as a reason to explore arms control options in both the US–Russian and US–Chinese strategic relationships. But even more so than previously, any such options need to encompass more than nuclear offensive weapons.

Any such [arms control] options need to encompass more than nuclear offensive weapons.

— LEWIS DUNN

Transparency and predictability

In turn, particularly in US and Soviet/Russian thinking, arms control is seen as a means to *enhance transparency, strengthen mutual predictability, and provide windows into the thinking* of potential competitors and adversaries. As a result, pressures for worst-case analysis may be reduced in planning and decision-making. This potential payoff is particularly important in the thinking of militaries and defence officials in both States. The very process of negotiations has been and remains an important source of insights; the formal limits contribute to predictability. After on-site inspections became part of the verification process from the mid-1980s onward in agreements dealing with both nuclear and conventional forces, those inspections provided important ground truth. In addition, proponents argue that lessened uncertainty about adversary intentions and capabilities can help to reduce political–military tensions.

Lessening the risk of nuclear conflict

Still another reason for arms control, broadly defined to include more than simply formal treaties, is its potential contribution in *lessening the risk of nuclear conflict*. Today, concerns about the risk of escalation to nuclear conflict are once again growing, not least due to the possibility of miscalculation and misinterpretation in an escalating crisis or conventional conflict between nuclear-armed States. Despite very significant reductions through arms control from Cold War highs, residual US and Russian nuclear forces retain the capability to inflict catastrophic societal destruction. Many, though not all, experts also believe that the risk is very high that any attempted limited use of nuclear weapons would escalate toward more catastrophic levels of destruction. In this context, dialogue between military and defence officials in the United States, its NATO allies, and the Russian Federation can help to identify possible pathways to unintended military confrontation and conflict as well as ways to make confrontation and conflict less likely to occur. More broadly, such dialogue also has a role to play between the United States and China as well as between India and Pakistan.

Improving relations between adversaries

More controversially, support for arms control also reflects the belief that the process and outcomes of arms control sometimes can sometimes *help to improve political relationships between adversaries*. In that regard, the very first arms control agreement, the 1963 Limited Test Ban Treaty (LTBT), was quickly negotiated eight months after the Cuban Missile Crisis brought Washington and Moscow to the brink of nuclear war. Its negotiation provided a mutual signal of both sides' recognition of the need for an improved political relationship. US–Soviet risk reduction agreements in the 1970s had a similar role as part of a wider process of détente. In turn, the readiness of the United States after the 11 September 2001 attacks to agree to Moscow's proposals to negotiate a legally binding strategic weapons treaty, SORT, and not to let formal treaty-based arms control end, were partly rooted in a desire for improved political relations.

Experience is at best mixed on this point. The initial US–Soviet bilateral limits on strategic offensive and defensive capabilities were part of the broader process of détente in the late 1960s and early 1970s, while the arms control breakthroughs of the late 1980s and early 1990s symbolized mutual commitment to a post-Cold War relationship. But past agreements frequently engendered internal domestic political debates about who got the better deal. Moreover, disputes over compliance have often meant that some agreements ultimately contributed to a worsening of political relationships, as is evidenced today in how disputes over compliance with the Intermediate-Range Nuclear Forces (INF) Treaty have become one more factor contributing to worsened relations between Moscow and Washington.

More broadly, some critics or sceptics of arms control express concern that arms control is only a manifestation of competition and rivalry among States and that it may even heighten such competition and rivalry rather than dampen it. In the United States, this view that only rivals 'do arms control' partly explains the reluctance of the George W. Bush administration in 2001–2002 to pursue a legally binding strategic arms treaty with the Russian Federation.⁴ This concern that arms control reinforces rather than tempers adversarial thinking also has been evident in some Russian and Chinese thinking.

Alliance solidarity

A commitment to arms control has been important for *sustaining solidarity with allies* in Europe and Asia, particularly for the United States and its allies. A readiness to explore arms control measures in response to military challenges has been—and remains—a necessary complement to actions strengthening the nuclear dimension of NATO's overall nuclear deterrence posture. In Asia, it reassures Japan. Nonetheless, differences between the United States and its allies on arms control 'specifics' have sometimes been evident, with possible unsettling impacts on alliance solidarity.

Meeting NPT obligations

A more political purpose of arms control is its contribution in *meeting the obligations of nuclear-weapon States (NWS) under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)*. Reductions of US and Soviet/Russian nuclear arsenals, for example, have repeatedly been cited to demonstrate compliance with the obligation to pursue nuclear disarmament under NPT article VI. Outside the bilateral nuclear arms control process, both France and the United Kingdom also have pointed to reductions in their nuclear arsenals as implementing article VI. Nonetheless, though welcomed, reductions of nuclear arsenals from Cold War highs is not generally seen as sufficient implementation of article VI. Many NPT non-nuclear

⁴ My thanks to Brad Roberts for reminding me of this line of thinking in the George W. Bush administration.

weapon States (NNWS) call for more fundamental changes of nuclear doctrine and posture as well as other building blocks of nuclear disarmament. More fundamentally, some NNWS officials and experts counter that reliance on arms control to help manage deterrence only makes it more difficult to make the more fundamental changes of nuclear postures, policies, and thinking needed to advance nuclear disarmament and to achieve the article VI goal of a world free of nuclear weapons.

Lessening military expenditures

Finally, one of the original arguments for pursuit of nuclear arms control was that it could help to *lessen military expenditures*. In practice, US–Soviet/Russian nuclear arms control did not deliver on this promise. Nonetheless, going forward, particularly in both the US–Russian and US–Chinese strategic relationships but also among India, Pakistan, and China, economic considerations could well become much more important as an arms control incentive. The needs of recovery from the COVID-19 pandemic would reinforce that incentive.

ANDREY BAKLITSKIY:

The description that Lewis Dunn provides above seems exhaustive. I would only add an additional thought on transparency and predictability. Successful arms control negotiations bond the negotiation teams and especially heads of the delegations. Implementation of the arms control agreements, especially its verification part, also serves as a good opportunity for military-to-military contacts at the working level. Accounts of both the Conventional Forces in Europe Treaty inspections and joint flights under the Open Skies Treaty demonstrate a high level of mutual interest of military representatives of participating States. In the current international environment, this is one of the few opportunities for the militaries from the States with adversarial relations to have human-to-human

Successful arms control negotiations bond the negotiation teams and especially heads of the delegations.

— **ANDREY BAKLITSKIY**


contact.

TONG ZHAO:

I very much agree with Lewis Dunn’s summary and would be happy to offer a few comments on some specific points, partly to help illustrate the Chinese thinking on these issues.

Dunn states that one of the reasons why proponents advocate arms control is that it “can sometimes help to improve political relationships”. I suspect that in some countries the understanding of the relationship between arms control and inter-State political relations is the opposite. According to this thinking, arms control is often a top-down rather than bottom-up process: after States make a political decision to improve their overall relations, arms control becomes possible as it is a tool to implement the already-made political decision to stabilize and improve ties; without a political commitment to improving relations first, arms control alone can rarely play the role of starting a process of reconciliation and hostility reduction.

This reflects a broader perception that arms control does not change the ‘power politics’ nature of international relations; in fact, arms control itself is often a result of power politics struggles, meaning that the weak accepts arms control obligations it has to accept and the strong imposes arms control obligations it can impose. For those States that hold this view, the role that arms control can play by itself to improve international relations is rather limited.



That said, most States accept the notion that to show public support for arms control strengthens one's international image and contributes to one's soft power. As great power competition intensifies, arms control diplomacy works to build one's image of a responsible power and attracts international support for one's foreign policy positions.

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— TONG ZHAO

However, the notion that the greater transparency and predictability that results from arms control will lead to greater stability and more security has not been universally accepted. For those States that attribute international instability to the hegemonic ambitions of enemies, their concern is that greater predictability may undermine deterrence and invite aggression. Furthermore, whether or to what extent arms control can help to lessen military spending is a complex question. In some cases, for example, nuclear arms control may simply play the role of shifting the money and resources that would have been allocated to nuclear build-up into conventional military competition. And whether that makes the world safer has no straightforward answer. That said, reciprocal nuclear buildup seems to cause the most serious mutual threat perception and security dilemma between States and to generate broader proliferation risks. If arms control can help to mitigate the degree of nuclear arms competition, it should generally contribute to more constructive security relations between States and thus lessen overall military spending. Whether US–Soviet/Russian nuclear arms control has failed to deliver on reducing military spending, as Dunn has argued, may need to be thoroughly examined by empirical research.

WHAT ARE THE MAJOR ASSUMPTIONS OF PROPONENTS OF STRATEGIC ARMS CONTROL?

LEWIS DUNN:

Perhaps the most important assumption of strategic arms control is that even in adversarial relationships, there may be sufficient shared, overlapping, or parallel interests to make arms control possible, from reducing the risk of nuclear war to avoiding economically costly military competition. Particularly related to conflict in new domains such as space and cyberspace, a related interest is seen to be avoiding actions that could damage or degrade national economies dependent on civilian uses of those domains. By contrast, sceptics of arms control argue that as long as there are adversarial relationships between States, arms control agreements—particularly involving limits or reductions of military capabilities—will be too difficult to negotiate, be meaningless in impact, or lack compliance. Sceptics also contend that while increased predictability is valuable to military organizations, it is counter-balanced by their interest in preserving and pursuing competitive advantages and preserving secrecy.⁵

In addition, legally binding bilateral and multilateral treaties with detailed verification provisions are often assumed to be the ‘gold standard’ of arms control. From its first successes in the 1963 LTBT and the initial US–Soviet strategic agreements of 1972 as well as the 1968 NPT, arms control has been associated with legally binding treaties. For many experts and officials, such treaties remain the ‘best’ form of arms control.

With regard to verification, initially, the United States and the Soviet Union relied on their own National Technical Means (e.g., imagery from satellites) for verification of their bilateral agreements. The effect was to limit the scope of agreements to what could be so verified. With its safeguards provisions allowing for access by inspectors to declared sites, the NPT pointed a way head. Later, political change in Moscow made possible the use of on-site inspections first in the confidence-building measures of the 1986 Stockholm agreement, then in a series of bilateral and multi-party nuclear and conventional arms control agreements from the 1980s onward. As a result, reliance on extensive regimes of on-site inspections, declarations, and related transfers of information came to be often seen as essential elements of arms control agreements. Along with formal verification measures, transparency measures also can be pursued, sometimes as a complement to on-site inspections and sometimes as a form of ‘light’ verification.

Arms control is much broader than treaties and the regulation of specific military capabilities.


— LEWIS DUNN

Nonetheless, there is increasing acknowledgement among both experts and officials that arms control is much broader than treaties and the regulation of specific military capabilities. Historical experience shows that there are many types of arms control outcomes. In addition, but particularly to bring arms control to bear to help address today’s dangers, it is important to adopt a broader view of it. So viewed, a spectrum of possible bilateral, multiparty, and multilateral arms control

approaches that could be explored to address today’s dangers would include, for example:

- legally binding treaties;
- negotiated political agreements, reciprocal political commitments, and parallel unilateral actions to constrain, reduce, or eliminate specific capabilities;

⁵ For a classic but still worth-reading cautionary criticism of the arms control endeavor, see Colin Gray, “Arms Can be Controlled, but Not by Arms Control”, in Colin S. Gray, *Fighting Talk: Forty Maxims on War, Peace, and Strategy*, 2009, pp. 141–143.

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- negotiation of multilateral or bilateral rules of the road, codes of behaviour, norms, and confidence-building measures;
 - political declarations;
 - bilateral and multiparty strategic dialogue and defence/military-to-defence/military engagement; and
 - unilateral actions and restraint designed to address other States' concerns.

The particular approach taken would need to be tailored to the specific problem to be addressed, by whom, and in what forum; combinations of approaches are possible—both for a given problem and as applied to different nuclear-armed States.

Arms control obligations have usually been symmetrical in their substance. Most often, each party agrees to the same limit or constraint on its capabilities or behaviour, as exemplified by bilateral US–Soviet/Russian offence–defence nuclear arms control agreements or by multilateral agreements limiting or ending nuclear testing (the LTBT and the Comprehensive Nuclear-Test-Ban Treaty, or CTBT). Indeed, a core principle of bilateral US–Soviet/Russian arms control was parity or equality of outcomes.⁶ However, the implementation of these 'equal' obligations may be asymmetrical, with one party to an agreement having to take different actions to meet them than another, as exemplified by different actions needed by the United States and the Russian Federation to reduce their nuclear forces to the New START limits.

Nonetheless, asymmetrical obligations and outcomes also are possible when those asymmetrical results are seen as serving all of the parties' interests. Most prominently, under the NPT the obligations differ for NWS and NNWS. Going forward, given the very different postures and capabilities among nuclear-armed States, any future nuclear arms control measures (defined broadly as above) involving the United States and China could entail asymmetrical obligations. One example could be US limits on strategic missile defences in exchange for Chinese limits on offensive nuclear forces. In turn, different States may also place greater emphasis on predictability or limits in one area than in another, making trade-offs between those States possible.


A final arms control assumption is that compliance with agreements is in the interests of treaty parties, though more technical questions may arise—or why else would parties have agreed to arms control constraints? This assumption underlies the establishment of consultative mechanisms in many arms control treaties to resolve disagreements at the margins over permitted activities under that agreement. However, this assumption of compliance also was tempered from the start by the emphasis on verification. In the words of US President Ronald Reagan, "Trust but verify". That said, over time, this assumption has been repeatedly tested and gradually eroded by compliance disputes that could not be resolved.

ANDREY BAKLITSKIY:

I would like to zoom in to some of the assumptions that might appear trivial, but if they are not shared across the board there is little chance for any kind of arms control.

To support strategic arms control, one must assume that limiting your adversary's freedom of action can be a good trade-off for putting limits on your own actions and capabilities (at least for a period of time). One should also believe that the international system and the rate of technological progress are stable enough that an arms control agreement would make sense during the period of time it was intended to last. By the same token one should accept

⁶ I owe this point to Sergey Rogov who stressed it during our dialogue.



that there are examples of successfully implemented arms control treaties in the past and the parties lived up to their obligations, and that those accomplishments could be replicated in the current environment. Finally, to support arms control one should believe that there is a 'sweet spot' between the level of verification necessary to detect a violation of an arms control agreement and the level which would give your military secrets away to the adversary. And a violation of an arms control agreement by the other side could be detected before it would have a significant effect and be successfully addressed.

Unfortunately, I am not sure that all the stakeholders in the United States and the Russian Federation (not to mention other nuclear-weapon States) share all the assumptions above, which can explain the precarious state of the arms control architecture we are witnessing.

I mostly agree with the points Lewis Dunn is making about arms control assumptions. There are also other examples of asymmetrical arms control limitations. For example, START I had limitations for road-mobile intercontinental ballistic missiles (ICBMs), which the United States did not have. Moreover, in 1991, the United States and the USSR signed a politically binding agreement to limit their long-range sea-launched cruise missiles (SLCMs) to no more than 880. The Soviet Union had much fewer than that number and was not planning to catch up.

TONG ZHAO:


It is generally true that even in adversarial relationships there may be important overlapping interests to pursue arms control. That said, the adversarial relations among some of the major powers today have become so bad that although there is still interest in avoiding war, there is no internal consensus about the need to contain military competition. The perceived stakes in winning future competitions and even conflicts are so high that saving outer space from destructive warfare and debris, for example, does not appear to receive the highest priority from some military planners.

There is no internal consensus about the need to contain military competition.
— TONG ZHAO

Not all States believe legally binding treaties with detailed verification provisions should be the 'gold standard' of arms control. The internal political divisions within the United States make legally binding arms control treaties hard to pull off. From the Chinese perspective, the United States does not always stick to its traditional emphasis on effective verification, including on the issue of establishing a verification protocol for the Biological Weapons Convention. China also argues

that verification is not always indispensable, such as in the case of verifying a future no-first-use of nuclear weapons agreement or verifying the proposed treaty on the prevention of the placement of weapons in outer space and of the threat or use of force against outer space objects.

Arms control obligations can be asymmetrical in implementation or initial design. But how to do so in a formal arms control agreement, especially to include new players such as China, is a real challenge. China, for example, does not appear to have arrived at a domestic consensus about whether it prefers to be formally recognized as an peer of the United States or as a lesser military power. It likes the pride and prestige of being a first-class military power but also worries about drawing unnecessary attention to its military potential that may undermine its image of a peacefully rising power. There is also the concern that entering a formal arms control treaty with the United States may imply the official codification of an adversarial relationship that resembles the Cold War rivalry between Washington and Moscow. Furthermore, because of China's relative lack of experience in negotiating bilateral



or trilateral arms control agreements, to negotiate a symmetrical deal would not be easy, and to start with a more complex asymmetrical deal or some kind of trade-off between different areas would be even harder.

WHAT ARE THE IMPORTANT UNCERTAINTIES OF ARMS CONTROL?

LEWIS DUNN:

There are important uncertainties⁷ that shape and impact arms control. Consider the following:


- Whether or not there is a *sufficient congruence of interests* among States to conclude arms control negotiations successfully is often uncertain at the start. Negotiating partners have a mix of incentives and disincentives to reach agreement. In turn, often complex and difficult issues need to be resolved in a manner that sufficiently satisfies not simply the direct negotiators 'at the table' but their allies and, even more so, many different entities 'back home'. Moreover, in the multilateral arms control realm, even when most States' interests overlap, the interests of only one or two can block efforts by many others to begin negotiations. Today's deadlock in the Conference on Disarmament amply exemplifies the capability of a few States to prevent negotiations on issues ranging from a fissile material treaty to an agreement on negative security assurances.
- The *impact of political–military–technological change* on existing and future agreements, including verification, has been and remains another important uncertainty for arms control. Changed political–military circumstances, for example, can lead a party to withdraw from an agreement or violate it covertly. But new political–military circumstances sometimes can lead to arms control innovations (as with the 1991 Presidential Nuclear Initiatives in response to concerns about disposition of Soviet tactical nuclear weapons after the breakup of the Soviet Union). In turn, depending on specifics, emerging new technologies can:
 - » make possible arms control verification (National Technical Means did so with early US–Soviet nuclear arms control);
 - » undermine the impact of an existing agreement (MIRVs did so with early US–Soviet nuclear arms control); and
 - » create incentives to explore non-treaty-based approaches (as with pursuit of multilateral norms of behaviour and codes of conduct for space and cyberspace).
- Reinforcing discrete technological changes in one domain, the existence of complex multi-domain competition—nuclear, advanced conventional weapons, space, cyber, AI—further adds to the difficulty of using arms control approaches to help regulate military competition.
- Still a different uncertainty facing arms control concerns how to *resolve allegations of non-compliance and to restore compliance*. Despite mechanisms sometimes built into agreements, dealing with compliance issues has and continues to be difficult. Technical uncertainties also may make it hard to reach agreement on whether a given capability or action is or is not in compliance. One or another party may have decided that its

The record of success in dealing with compliance challenges has been poor.

— LEWIS DUNN

interests are better served by non-compliance but also by not withdrawing from an agreement. But the lack of any clear and compelling means to enforce compliance, whether with bilateral or multilateral agreement, make it hard to restore compliance. Thus, the record of success in dealing with compliance challenges has been poor.

⁷ Uncertainties are closely related to 'failure modes' (discussed next). The former is intended to highlight issues that are likely to be present from the start of efforts to use arms control as part of addressing a strategic challenge.

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- Finally, the extent of necessary *domestic political and military support* for arms control has become an ever-more important uncertainty. For example, arms control has become deeply politicized and part of the broader partisan debate in the United States. It is now nearly taken as a given that Democratic presidents cannot win treaty ratification with a Republican Senate. However, uncertainties about political–military support for seeking to bring arms control to bear in helping to resolve strategic challenges are not limited to the United States.

ANDREY BAKLITSKIY:

As with any forward-looking measure in a volatile international system, arms control faces many uncertainties. Even the estimate of what would be a military significant violation and how likely/how soon it should be discovered for an agreement to be viable is not a straightforward question. The same is true regarding verification measures and how intrusive they should be. Responses to both of those questions are inherently political. There is also the fact that the political significance of non-compliance could be big great even if the military significance is small. Internal politics can influence the perception of significance of any given arms control dispute.

Moreover, States generally stick to their arms control obligations as long as they believe it is in their national security interests. This could change because of the shifts in the international balance of power, actions of a third party, technological progress, or a change of government in one of the sides to the arms control agreement. Those changes could be difficult to predict, which could catch the other sides off guard. It could also involve something totally disconnected from the nuclear weapons sphere (for example, the Soviet invasion of Afghanistan and SALT II). When a State does not believe a certain agreement advances its security anymore, it can withdraw from the treaty or violate it (though both actions can have a cost attached).

Response to arms control non-compliance is another open issue. It will be heavily influenced by the nature of the non-compliance, cooperation of the non-compliant side and the importance/benefit of the treaty to the compliant party. The possibility of a genuine difference in the interpretation of an agreement further complicates things. Of course, each State is free to leave a treaty that it perceives as being violated by the other side, but this is a weapon of last resort. It also brings along reputational costs outside (especially if the State cannot prove its case to the international community) and inside its borders. In any case the availability of a credible response to non-compliance seems to be desirable for the health of an arms control agreement.


Finally, when an arms control architecture consists of a few interconnected agreements, which form a comprehensive net, the disappearance of one of them can lead to the unravelling of the whole system. For example, the disappearance of the ABM Treaty led to creation of the new weapons outside the scope of classical strategic offensive arms. Disappearance of the INF Treaty meant that it was possible to produce missiles with ranges just below the New START limit, etc.

**The disappearance of one...
[agreement] can lead to
the unravelling of the whole
system.**

— ANDREY BAKLITSKIY

TONG ZHAO:

Indeed, the extent of necessary domestic political support for arms control has become an ever-more important uncertainty. This is true for all States. In the case of China, for example, international observers have pointed out that the People's Liberation Army (PLA) is a relatively reluctant player when it comes to arms control dialogues and exchanges; today, the PLA



and the defence industry are the main beneficiaries of increasingly intensified great power competition. It is not surprising that their interest in joining arms control discussions is low. At the same time, their relative influence in China's foreign and security policymaking seems to be rising. The greatest challenge, therefore, comes from the difficulty of overcoming internal resistance and of gathering necessary domestic political support for arms control.

The complexities of today's multi-domain and cross-domain competition—nuclear, advanced conventional weapons, space, cyber, AI—pose a significant external challenge. Russian and Chinese military strategists, whose top priority is to ensure the credibility of their State's second-strike nuclear capability, have to consider the potential threats to nuclear weapons from a wide range of non-nuclear technologies. Without a methodology to accurately evaluate the aggregate impact of the enemies' missile defence, conventional precision weapons, cyber, AI, and space-based sensors on a State's nuclear deterrent, it is far too easy for worst-case thinking to drive an open-ended nuclear modernization programme. New technologies, and the failure of States to build common understandings on their impact, constitute a key external uncertainty for arms control.

WHAT ARE THE MOST SALIENT FAILURE MODES OF ARMS CONTROL?

LEWIS DUNN:

Turning to possible arms control failure modes, the erosion of official/institutional support in one or more of the parties to an existing agreement has repeatedly been the most prominent. Depending on the agreement, different factors have been at work. Changed political–military requirements, including the impact of third-party military actions/developments that spill over to impact military relationships among parties to an arms control agreement often have been important. Leadership change—or conversely, lack of leadership change—that provides little opportunity for re-evaluation of established approaches is a different failure mode. New technological opportunities that either heighten the impact of continued restraint or offer ways to circumvent the purpose of the agreement have sometimes played a part. Still another factor may be perceptions that a party is cheating on an agreement or otherwise taking an unfair advantage amplified by domestic politics—both directly related to the costs and benefits of arms control and to arms control becoming a domestic political ‘talking point’, and indirectly related to leadership change for other reasons bringing to power arms control sceptics. More broadly, underlying and deeply rooted scepticism about arms control can reinforce more specific factors leading to an erosion of support. Such scepticism may be present in the political leadership, the military leadership, or experts and publics.

Arms control may erode and ultimately fail in different ways. Even after an agreement is negotiated and signed, it may fail to enter into force due to an inability to meet the necessary conditions. The failure to enter into force of the CTBT with its requirement for ratification by a specified list of 44 States is a good example. Simmering non-compliance may both hollow out an agreement and ultimately lead to withdrawals by other parties. At least from the United States perspective, for example, Russian non-compliance over a decade plus with the INF Treaty led ultimately to the US decision to withdraw. Sometimes agreements may not necessarily fail but simply fade away, even though such agreements could still contribute to arms control’s purposes. The gradual neglect and failure to make use of ‘long-ago’ US–Soviet risk reduction agreements of the 1970s stand out. Most recently, failure has taken the form of decisions to exercise the withdrawal provisions of given agreements, as with the US decision to withdraw from the INF and Open Skies Treaties as well as the earlier withdrawal from the ABM Treaty. Finally, an agreement may fail through the erosion of its effectiveness and legitimacy over time. Here, there is fear that a failure to revitalize pursuit of the nuclear disarmament goal of the NPT may yet lead to the hollowing-out over time of that treaty.

Arms control may erode and ultimately fail in different ways.

— LEWIS DUNN

To approach this question from a different direction, it is useful to ask the converse—that is, what are the success modes of arms control? Broadly conceived, a starting point of an answer is found in asking what led to the initial successful negotiation of the 1987 INF Treaty (now ironically representing the most prominent US–Russian arms control failure). One key element was sufficiently overlapping interests in Washington and Moscow—not the same interests but congruent interests; not at the start of the negotiations but once NATO deployed INF missiles. There also was a sense of urgency and threat, though different on both sides. Negotiating skill on both sides—and an identifiable ‘solution’, the zero option for INF missiles—also made a difference. The fact that the INF negotiation was basically a two-State (with allies) negotiation also simplified the process. In turn, from the US perspective, it proved possible to

manage existing compliance and verification concerns arising out of Soviet behaviour in past arms control agreements. That approach was reflected in the US mantra of 'trust but verify'. Military support in both Washington and Moscow mattered as well. Not least, the success in negotiating the INF Treaty grew out of a shared leadership vision: both Reagan and Gorbachev wanted to break out of the increasingly dangerous Cold War military confrontation between the United States and the Soviet Union.

ANDREY BAKLITSKIY:

Lewis Dunn provides an exhaustive summary of the possible failure modes of arms control. I would stress two points, which in my view represent critical challenges to arms control. We have seen time and again that increasing rivalry between the parties of the arms control agreements can lead to those agreements falling apart. The trigger could lie in the same arms control sphere (ABM Treaty and START II) or have nothing to do with it (Afghanistan and SALT II). Another challenge is a possibility of losing the faith in arms control as a concept in the long run because of the failures of previous agreements. Both problems are political, as much of arms control is. Both seem very difficult to deal with from within the system.

TONG ZHAO:

External military and political pressures sometimes seem to be very relevant factors in forcing a reluctant State into seriously considering arms control. The US deployment of land-based medium-range missiles in Europe played a role in pressuring the Soviet Union to negotiate the INF Treaty; the international political pressure on China in the late 1980s and early 1990s also affected Chinese calculations in stopping nuclear tests and joining the CTBT negotiations. That said, such pressure, especially military pressure, can also backfire. If a State is very confident of its own financial and technological capacity to outcompete its rival in a military competition, the development and deployment of advanced weapons by the perceived enemy could strengthen one's own determination to 'double down' in a full-fledged arms competition. More than one great power today seems to have such confidence.

The role of national leaders can hardly be exaggerated for the success or failure of arms control. From the Chinese perspective, the collapse of the ABM Treaty is mostly a result of the 'unilateralist' approach of President George W. Bush and his senior associates. Similarly, different Chinese top leaders have also shaped China's approach on security issues in significantly different ways, including on issues of arms control. In democratic States, the shift of power between political parties often accounts for the success and failure of arms control. The Republicans taking control of the US House of Representatives in 1995 doomed the Agreed Framework between the United States and the Democratic People's Republic of

Korea; the ending of the Joint Comprehensive Plan of Action involving the United States, the Islamic Republic of Iran, and a few other States can also be partly attributed to partisan politics.

Getting the military on board with arms control agreements is highly important.

— TONG ZHAO

Getting the military on board with arms control agreements is highly important. The Soviet military was hard pressed by Gorbachev to accept the INF Treaty, but the military's unhappiness with the Treaty persisted and eventually contributed to its demise decades later. Authoritarian civilian leaders in highly centralized political systems are generally believed to be capable of reigning in the influence of the military. Their actual capability to do so varies from case to case.

WHAT IS THE RELATIONSHIP BETWEEN STRATEGIC ARMS CONTROL AND NUCLEAR DISARMAMENT AND NUCLEAR DETERRENCE?

LEWIS DUNN:

In principle, strategic arms control can be an *enabler of progress towards nuclear disarmament* rather than only being a means to serve stable nuclear deterrence, as discussed next. In practice, making strategic arms control a nuclear disarmament enabler would call for a broadening of traditional thinking about arms control in a number of ways. A first step would be to pursue arms control approaches that would help to lessen the risk of strategic competition among nuclear-armed States, thereby creating a better context for revitalizing the pursuit of nuclear disarmament. Specific arms control initiatives that would seek to reduce reliance on nuclear weapons in doctrine and posture also could be given greater priority. In turn, using arms control as a disarmament enabler would include actions to put in place disarmament 'building blocks', from strengthened verification to steps to build confidence that compliance challenges would be met. Part of this process also should focus explicitly on seeking agreement on a vision of pathways to transition away from reliance on nuclear deterrence and possible waystations towards a world free of nuclear weapons. One such way station could be the strategic elimination of nuclear weapons as means of statecraft.⁸

In practice, the central focus of past bilateral US–Soviet/Russia arms control has been to reduce risks and help to manage the deterrence relationship between Washington and Moscow. Today, this dimension of arms control is once again of great importance given the risks of a deterrence failure. However, a focus only on reducing the risks evidenced in the US–Russia bilateral nuclear relationship is too narrow for many reasons. Efforts are also needed to reduce the risk of deterrence failure in relationships among other nuclear-armed States. Closely intertwined strategic relationships among today's nuclear triangles—US–Democratic People's Republic of Korea–China, US–China–India, China–India–Pakistan, US–Russian Federation–China—heighten the spill-overs among bilateral relationships and increase the risk of arms competition. Space, cyber, advanced conventional weapons, and other domains of competition that impact multiple nuclear deterrence relationships need to be explored, including via multilateral approaches. Both formal and less formal means of integrating other nuclear-armed States, not least China, into the arms control process also warrant attention. Cooperative efforts also need to focus on other pathways to use of nuclear weapons that are unrelated to nuclear deterrence, for example, terrorist use of an improvised nuclear device. Most broadly, in seeking to use arms control to reduce deterrence risks it is essential to recognize that one size does not fit all. Rather, the approach to take would look at arms control as a 'big tent' in terms of problems, approaches, and initiatives.

A focus only on reducing the risks evidenced in the US–Russia bilateral nuclear relationship is too narrow

— LEWIS DUNN

Finally, these two dimensions of strategic arms control and of the many approaches that make it up should be viewed not as an either–or choice but as mutually reinforcing. Both can be leveraged as means towards a safer and more secure world for all countries.

⁸ See Lewis A. Dunn, *Redefining the U.S. Agenda for Nuclear Disarmament: Analysis and Reflections*, Livermore Papers on Global Security No. 1, Center for Global Security Research, 2016, pp. 43–52.

ANDREY BAKLITSKIY:

Nuclear deterrence is generally seen as underpinning strategic arms control. Strategic arms control is conducted in a way that does not undermine effective nuclear deterrence based on (preferably) secure second-strike capability.

Strategic arms control was the first process which led to nuclear disarmament. It also pioneered some of the concepts that would become an integral part of nuclear disarmament like verification of destruction of nuclear missiles. Overall, strategic arms control decreased the number of nuclear weapons in US and Russian arsenals to a much lower level, bringing the world closer to global zero.

However, arms control is often based on military/deterrence requirements (which disarmament supporters often ignore or even oppose). It also does not necessarily have to be about disarmament. Arms control is possible at the existing levels of nuclear warheads or even with an increase in numbers. This, and the belief that arms control legitimizes the possession of nuclear weapons, leads to its criticism on the part of the disarmament community.

TONG ZHAO:

Over the past few decades, China's nuclear policy thinking has been influenced less and less by idealism and more and more by pragmatism. As a result, there has been less enthusiasm about nuclear disarmament and a greater emphasis on maintaining deterrence.

China generally agrees that gradual and incremental arms control may eventually lead to the achievement of disarmament but disagrees about the merit of some specific arms control approaches. Most importantly, many Chinese experts do not think arms control should seek to make nuclear conflicts less ugly. They worry, for example, that arms control measures aiming to reduce the humanitarian, environmental, and ecological consequences of nuclear conflicts would make nuclear wars more likely to happen and erode the international taboo against the use of nuclear weapons.

Regarding the role of arms control to address the uncertainties and failure modes of nuclear deterrence, the mainstream Chinese view is a little different. Uncertainties of nuclear deterrence are not necessarily viewed as a problem. Especially today, when many Chinese policy experts believe the United States is demonstrating considerably greater hostility towards China, some of them argue for greater uncertainties to maximize the deterrence value of Chinese nuclear weapons against a broader range of perceived US aggression. At the same time, China has traditionally paid less attention to possible failure modes of nuclear deterrence than many western nuclear powers. There

There is a genuine lack of appreciation of possible pathways of inadvertent nuclear escalation.

— TONG ZHAO

is a genuine lack of appreciation of possible pathways of inadvertent nuclear escalation. Therefore, to build shared understandings on possible failure modes of nuclear deterrence and the potential consequences is a prerequisite to conduct constructive arms control dialogues among major nuclear powers on reducing nuclear risks.



A COMPENDIUM OF COMMENTS ON THE LOGIC OF STRATEGIC ARMS CONTROL

As part of UNIDIR's Disarmament, Deterrence and Strategic Arms Control Dialogue, the Institute invited written, informal comments from among the initiative's participants in advance of a by-invitation online meeting held on 25 November 2020. The purposes behind inviting these comments were to create a focus on issues of substance in advance of the meeting, kick-start its discussion, and ensure that diverse viewpoints were covered.

As such, the comments that follow (included with permission of the commentators) were offered in advance of the final version of this paper, which was revised to reflect some of this feedback.

In addition, the commentators offered their viewpoints in their own personal capacities and their comments should not necessarily be interpreted as reflecting their official positions or affiliations.

COMMENT BY JOHN BORRIE ¹

In their paper on “Some Thoughts on the Logic of Strategic Arms Control”, Lewis Dunn, Andrey Baklitskiy and Tong Zhao have set out three perspectives that are distinct, yet notable at the same time, for the degree to which they share a common set of concepts and terms. This speaks to the intellectual parsimony and elegance of nuclear thinking as it has evolved around matters of nuclear deterrence and strategic arms control as responses to the threat of nuclear conflict—and the staying power of the *lingua atomica* that arose during the Cold War that today remains the dominant way to talk about it in international security circles. Although it should not be assumed that their views are representative of the strategic cultures of the nuclear-armed States each author is a national of, it suggests that despite profound differences in those strategic cultures some common precepts are shared, or at least understood.

That these common precepts exist is important and cannot necessarily be taken for granted. Nor should it suggest that those embedded within each strategic culture necessarily *do* understand each other’s perspectives, capabilities and intentions accurately—merely that they have a set of conceptual tools of potential service, for instance in strategic arms control. At the same time, the *tour de table* that the paper represents illustrates problems with nuclear deterrence that have yet to be solved and which arms control may not be able to solve, as the authors each observe.

Nuclear deterrence is a paradigm in the sense that it is a set of assumptions and supporting propositions sufficient to attract an enduring group of adherents away from competing models of security. Tanya Ogilvie-White’s paper in this series has already indicated that many of those favouring nuclear deterrence as a real-world strategy at the current time are well aware of its paradoxes and are, to paraphrase one DDAC Dialogue participant, “reluctant deterrers” to a greater or lesser degree. Strategic arms control measures can thus be viewed in one sense as means to adapt the nuclear deterrence paradigm to cope with or avert the worst of those aspects—arms racing, crisis, nuclear war—in the quest for first-strike nuclear deterrence stability. Although it has had different functions, and has varied in success, strategic arms control shares a common rationale with nuclear deterrence. As such, in the eyes of nuclear possessors, strategic arms control does not fundamentally challenge the salience of nuclear weapons. It provides guard rails to help prevent driving off the cliff.

Most importantly, strategic arms control has yielded some results. And to non-adherents of the nuclear deterrence paradigm—like those proposing nuclear disarmament for moral or humanitarian reasons—strategic arms control is worth supporting if it gets results, or at least generates signs of transition away from perpetual reliance on nuclear weapons.

And therein lies a problem, because lately strategic arms control has not been getting much in the way of results due in large part to the negative trust spiral among the ‘great powers’, that is, the United States, the Russian Federation and China. This tends to strengthen a suspicion that some of those adhering or sympathetic to the nuclear disarmament paradigm have always had: that in good times strategic arms control is a management activity intended to preserve the nuclear status quo, and that in bad times management is easily abandoned for naked strategic competition. In neither case does strategic arms control, or the nuclear deterrence paradigm it is plugged into, lead to the reduced salience of and reliance on nuclear weapons. Like any homeostatic system, the quest to ensure strategic stability—whether by technological/military means, or through arms control ‘lawfare’—returns to a mode in which

¹ John Borrie is a Senior Fellow at UNIDIR, and an Associate Fellow at Chatham House. The views expressed are his own.



nuclear retaliatory capability is maintained indefinitely.

Who can prove beyond all doubt which view is right? What can be said is that strategic arms control is probably not enough to achieve a nuclear-weapon-free world without more fundamental structural changes in international security politics that engender trust, as both late Cold War history and a large pile of scholarly studies attest. But arms control is necessary to stabilize a crisis-prone strategic situation and to reduce the chances of the nuclear-use threshold being crossed, and to contribute to the conditions in which structural changes might occur, including by regulating and dampening destabilizing arms racing dynamics.

Beyond that, what would strategic arms control in the service of disarmament look like, as opposed to nuclear deterrence? (In the shorter run, it is accepted that strategic arms control measures could contribute to both. One could argue we do not really know what the longer run looks like because, when that fork in the road came, the Russian Federation and the United States both took the modernization path looping back to nuclear deterrence. Which is where we are now.) Here are a few preliminary and non-exhaustive thoughts, stimulated by this paper:

- It would entail measures that demonstrably reduce the salience of nuclear weapons in strategic and operational military doctrines, and which over time build upon and mutually strengthen one another, even if ostensibly unrelated.
- Arms control measures would not create new forms of instability, for instance foreseeably replacing competition in one type of strategic system to be regulated or abolished with competition in developing or deploying another that is corrosive to establishing strategic trust.
- These measures would not be forced through or insisted upon at the cost of creating Pyrrhic victories that alienate domestic populaces and lawmakers and thus doom further arms control measures that would have created conditions for reducing the salience of nuclear weapons and contribute toward a nuclear-weapon-free world's prospects. This is easier said than done, especially in the US case. So strategic arms control should both reflect and help to shape national and alliance strategic cultures.
- It would be recognized that strategic arms control measures reflect processes of strategic dialogue and evolving mutual understanding that have longer-term value in creating conditions for disarmament, even if too modest to excite much enthusiasm among disarmers.
- Arms control measures would be consistent with existing expectations, norms and agreements broadly held in the international community.
- Arms control would not be a tool for the strong to yoke the weak. (Tong Zhao alluded to this at one point, which made me think – as did Zhao – of Thucydides' 'Melian Dialogue' in which the strong do what they have the power to do, and the weak accept what they must.) Blame the 'dodgy dossiers' and the 2003 Iraq invasion over alleged WMD if you like, but this is a concern for some, and not only among the Non-Aligned.
- These measures would not necessarily be legally binding. It follows that they would not be verifiable in the sense of legally binding agreements that exist, such as the New START agreement, the NPT and the Chemical Weapons Convention. But there would be mutual understandings about how confidence in compliance is to be ensured, and costs for not doing so.

COMMENT BY LI CHIJIANG¹

Let me begin by commending the excellent paper drafted by Lewis Dunn, Andrey Baklitskiy and Tong Zhao, in which you have very comprehensive analysis on the logic of strategic arms control. I believe those analysis laid a sound foundation for our further discussion within the Disarmament, Deterrence, and Strategic Arms Control Dialogue. I would like to share my following observations on the paper:

Why do arms control proponents advocate it?

The purpose of international arms control is to enhance the security of all States through dialogue and cooperation, so as to achieve equal, common and universal security. Unfortunately, we have witnessed a number of withdrawals from international arms control treaties and organizations by a certain State, which have caused severe damage to multilateral and bilateral arms control and disarmament regimes and efforts. Therefore, it is not helpful if any State continues to pursue arms control based on unilateralist policies. I would like to emphasize the importance of upholding multilateralism within the arms control arena, especially the necessity of maintaining strategic balance and stability, which will benefit the security of all States.

What are the most salient failure modes of arms control?

In recent years, there is a lot of discussion about the lack of progress in international arms control, disarmament and non-proliferation regimes. Some States even advocate that it is time to think about a so-called 'New Era' of arms control, which in my view will erode the international arms control architecture and long-term agreed principles and consensus within the international arms control treaties and relevant United Nations First Committee resolutions. In the current international security environment, there is urgent need for all States to safeguard the existing international arms control architecture, otherwise we may face further damage of the authority and effectiveness of that architecture.

Another salient failure mode of arms control is 'bubble disarmament', which means an arms control treaty was achieved without consensus of all relevant parties and will inevitably lack universality and effectiveness during its implementation. Such a treaty may even have a negative impact on the Conference on Disarmament and the NPT regime.

In order to prevent the failure of arms control and to promote strategic stability, the international community needs to adhere to the existing international consensus, including the Final Document of the first special session of the General Assembly devoted to disarmament (SSOD I) and the outcome documents of the previous NPT Review Conferences. For instance, it should highlight the special and primary responsibilities of the two largest nuclear-weapon States for nuclear disarmament, adhere to the principle of undiminished security for all and maintain global strategic stability, as well as extend the New START agreement as soon as possible.

¹ Li Chijiang is Vice President and Secretary-General of the China Arms Control and Disarmament Association, based in Beijing. The views expressed here are his own.

COMMENT BY BRAD ROBERTS ¹

The three sets of comments reveal a significant convergence of thinking around a compelling logic for strategic arms control. Yet international developments have not followed this logic. The arms control regime crafted in the second half of the Cold War has eroded to the point of near collapse; New START extension would provide only a short reprieve, unless it paves the way to a more transformational approach. What explains the unwillingness of national leaders to embrace the arms control logic set out here?

The comments of the three contributors hint at some factors. Some of the assumptions guiding arms control strategy better fit the Cold War, with its bipolar character and nuclear focus, than the current era, marked by multipolarity and military competition in multiple new domains. Many of the uncertainties and failures of arms control seem magnified by the fluidity and unpredictability of the current international system.


Three additional factors merit our attention. First, it is not in the interest of the Russian Federation or China, as defined by Presidents Putin and Xi, to provide the United States and its allies the stability, security, and predictability they seek. Putin and Xi clearly see the United States and its alliances as sources of danger, pursuing grand strategies of encirclement and containment that are inimical to their interests in remaking the international order to their benefit and in preserving the particular forms of government they lead. A more secure United States is, in their view, a more dangerous United States. Increased nuclear risk serves to keep the United States and its allies at bay.

Second, for many Americans, the logic of arms control is less compelling than before. This has something to do with the pattern of non-compliance on the part of the Russian Federation. This follows also from the failed US aspiration of the 1990s and 2000s to use arms control as a means to remove strategic military competition as an irritant in the developing political relationships with the Russian Federation and China. Leaders in the Russian Federation simply misread US strategic intent and failed to seize the opportunity seen by the George W. Bush administration “to move nuclear weapons out of the foreground and into the background” and to ensure that nuclear weapons were no longer the “main currency of power” in the relationship. Leaders in China made similar mistakes.

Third, the Russian Federation, China, and the United States are all reluctant to accept restraint at this time. They all perceive security environments rich in danger and increasingly uncertain. They all perceive a possibility of gaining new advantages, but also of falling dangerously behind, in the pursuit of military applications of new technologies. To use a Cold War analogy, today’s strategic competition is more like that of the 1950s, before the sobering effect of the Berlin and Cuba crises, than like that of the 1980s, when the competitors tired of long-term competition and found ways to compromise.

Tong Zhao argues that arms control can be useful for stabilizing a strategic relationship “after States make a political decision to improve their overall relations” (p. 7). In my view, that decision will be a long time coming, as it will require either a fundamental remaking of the international orders to which Xi and Putin object or the arrival of new leadership in China and the Russian Federation, or both, with a different worldview.

¹ Dr. Brad Roberts is Director of the Center for Global Security Research at Lawrence Livermore National Laboratory in California. From April 2009 to March 2013, he served as Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy. The views expressed are his own.



In the absence of improved political relationships, Western advocates of stable strategic relations among the major powers could usefully increase their focus on steps that can be taken without the other partners to promote stability. They could also usefully focus on two practical steps suggested or implied by Tong Zhao: (1) the collaborative development of a methodology to evaluate the aggregate impact of new forms of competition on strategic stability, and (2) deeper collaborative analysis of the possible pathways to failure of deterrence leading to unwanted forms of escalation in order to inform an improved leadership risk assessment.

COMMENT BY MANPREET SETHI ¹

- It is an excellent idea to present three perspectives as part of same document. The comprehensive overview and thoughtful analysis by all three authors allow little scope for addition. My points below either echo those already made because I want to underscore their relevance, or add some new dimensions from India's perspective.
- There is tension in the relationship between the political environment and arms control. This is the chicken and egg problem of what comes first—whether good (decent and cordial, even if difficult and full of differences) political relations are necessary for arms control or whether arms control leads to good relations.
- Surprisingly, none of the three authors refers to the Cuban missile crisis as the trigger for bringing home the fragility of US–USSR relationship, and hence the need for arms control and strategic stability.² The experience of a crisis that brings States close to the nuclear precipice can foster a mutual interest in ensuring survival.
- Not surprisingly, while challenges of arms control have been well identified by all three, more can still be added:
 - » Nuclear arms control is complicated by the current reality of a multiplicity of nuclear possessors where dyads elongate into 'chain' relationships.
 - » Also, unlike the two Cold War players that enjoyed a broad nuclear parity in terms of numbers and capabilities, current nuclear possessors are perched at different levels of nuclear numbers and capabilities.
 - » Nuclear arms control could be far more narrowly framed in the past owing to a distinction between conventional and nuclear capabilities and assets. Today, many non-nuclear capabilities, such as conventional precision strikes, including with hypersonic delivery systems, conventionally armed autonomous delivery vehicles, and cyber offensive capabilities, impinge on nuclear deterrence. Hence, unadulterated focus on nuclear weapons or systems as objects of arms control no longer appears feasible. For example, China and the Russian Federation justify their own hypersonic programmes as a way of stabilizing a situation that has been upset by US Conventional Prompt Global Strike and ballistic missile defences (BMD). But their hypersonic programmes have made the United States feel the need for deployment of space-based sensors and interceptors for improving BMD, especially the capability of boost-phase interception.
 - » As has been brought out more than once from the Chinese perspective, China does not consider instability as necessarily undesirable. This creates the problem that there is no shared sense of risks of strategic instability, and hence no shared interest in mitigating them.

Value of Arms Control

- Strategic arms control negotiations, even if they do not yield any concrete outcomes, can still help to inculcate habits of engagement, produce insights into each other's strategic thinking, and help to foster a shared understanding of key concepts and dangers.
- Negotiators can develop a relationship over time to keep channels of communication open even in difficult moments. Like the military–industrial complex, this group can also

¹ Dr. Manpreet Sethi is Distinguished Fellow at the Centre for Air Power Studies, based in Delhi, where she leads its programme on nuclear security. The views expressed are her own.

² Editor's note: In his revised version, Dunn refers to this because of this comment.



become an influential stakeholder in domestic opinion-making.

- Strategic arms control can act as template or model for others. Effective implementation of agreements can provide an incentive for other nuclear dyads to adopt and adapt.

Arms Control—An Indian Perspective

- Cold War arms control was an exercise in rationalization of runaway excessive stockpiles. It did not reduce risks of nuclear exchange; only reduced the number of times the rubble would bounce. Nevertheless, by arresting the offence–defence cycle, it had an impact on international security.
- Arms control was also used as technology denial.
- Mere arms control cannot lead to disarmament. That requires a change in mindsets on the value attached to nuclear weapons. Arms control is only a way to manage the arms race and to arrive at a less dangerous modus vivendi.
- Strategic arms control may not reduce defence expenditure but only reappropriate it.

Additional Thoughts

- Arms control requires a sense of equality of obligations and benefits.
- The idea of arms control can be marketed as a bestower of soft power.
- Given contemporary realities, mere imposition of ceilings on numbers or control on weapon systems cannot suffice. A broader view will be necessary. In fact, to remove the baggage of terminology, it may be useful to consider calling it differently, for example, managing nuclear risks.
- The role of leadership, as well as domestic consensus, is critical.
- Unilateral measures may sometimes lead to reciprocation. This could open the way for mutual arms controls and hence need to be encouraged.



COMMENT BY MARGOT WALLSTRÖM ¹

To help frame our discussion of the paper, let me offer a number of comments/questions for consideration in the UNIDIR DDAC Dialogue. Specifically:

- How could external pressure on nuclear weapon States work—and for what purposes? What role can non-nuclear weapon States (NNWS) play? Are new platforms needed to bring in NNWS?
- Should it be an advantage to live in a democracy with regards to transparency, debate and decisions about arms control? Should citizens have a voice?
- All three of the authors regard political leadership to be necessary to maintain arms control policies and mechanisms. If so, how do we then create a sense of political responsibility/liability/pressure on leaders, if not through engaging and mobilizing the public and civil society on these issues? Secrecy of course stands in the way.
- To pave the way to future arms control agreements, should efforts begin with confidence-building measures rather than pursuit of direct military limits? What would change if emphasis were placed first on small steps for dialogue, contacts or something like that?
- The importance of verification and control measures seems to be increasing. How should that shape future arms control efforts?
- This whole debate about nuclear disarmament, deterrence, and arms control is a testament to the need for a new definition of security that includes pandemics, disinformation, cyber, hybrid warfare, and other new dimensions.
- Finally, what an interesting comment by Tong Zhao in his last sentence: “to build shared understandings on possible failure modes of nuclear deterrence and the potential consequences is a prerequisite to conduct constructive arms control dialogues among major nuclear powers on reducing nuclear risks” (p. 19)—is this an opening to be pursued?

¹ Margot Wallström is a member of the United Nations Secretary-General’s Advisory Board for Disarmament Matters, and a former Minister of Foreign Affairs of Sweden. The views expressed are her own.

COMMENT BY PETER WATKINS ¹

The paper provides an admirably comprehensive account of the reasons why people (political leaders, officials, military officers, commentators, etc.) advocate strategic arms control and the assumptions that they make in doing so—and the practical reasons why such arguments do (and do not) gain traction. A granular and dispassionate understanding of these factors is particularly useful at a time when wider geopolitical conditions appear so unfavourable to strategic arms control—resulting in the demise of long-standing agreements such as the INF Treaty and limited prospects for new agreements—as it may offer some pointers towards remedial action.

I come to this topic as a former senior policy official in the Ministry of Defence of a nuclear weapon State (NWS), the United Kingdom. In my final role as the ‘Policy Director’, I was responsible for (nuclear) deterrence policy. The United Kingdom is unabashed by its status as an NWS—but is also not especially enthusiastic about it. Although there has been an almost continuous political consensus (and a clear majority of public opinion) in favour of nuclear deterrence, this has been subject to significant challenge—on moral and practical (mainly financial) grounds. British governments have thus tended also to be strong supporters of arms control—and they both subscribe to nuclear disarmament as a long-term goal and have taken steps to disarm. At the height of the Cold War, one official document said:

Any readiness of one nation to use nuclear weapons against another is terrible. No-one ... can acquiesce in it comfortably as the basis for international peace for the rest of time. We have to seek unremittingly, through arms control and otherwise, for better ways of ordering the world. But the search may be a very long one ... and impatience would be a catastrophic guide.²


Post-Cold War, British governments decided to have only one nuclear-weapons delivery system (disbanding the air-delivered nuclear weapons capability) in the 1990s; to reduce the number of operationally available warheads to 160 in 2006 and to 120 in 2010; and to reduce the overall stockpile to 180 by the mid-2020s—leaving the United Kingdom with a ‘minimum credible deterrent’. This has, of course, created its own bind—the potential risk to the small nuclear deterrent forces of the United Kingdom (and France) from multilateral nuclear arms reductions which would still leave other NWS with weapons to spare. Hence the position of successive British governments that they would be willing to include the United Kingdom weapons in any negotiations only when ‘useful’ to do so.

So, I have always seen a positive relationship between arms control and deterrence, reinforced by personal experience. At the start of my career in the early 1980s, I worked on putting into effect NATO’s ‘double track’ decision on INF—which meant basing ground-launched cruise missiles in the United Kingdom. Towards the end, I spent some time working on the issues raised by Russian non-compliance with the INF Treaty, including seeking to persuade the United States against premature withdrawal from the Treaty.

Lewis sets out (almost) exhaustively the reasons why the proponents of arms control advocate it. From my perspective, I strongly align with the first four (enhancing strategic stability, managing disruptive technological/military changes, helping to avoid arms racing, and

¹ Peter Watkins is an Associate Fellow at Chatham House, and a retired British defence official. The views expressed are his own.

² United Kingdom, *Statement on the Defence Estimates 1981*. The anonymous author of these words was Sir Michael Quinlan, the Policy Director of the day.



enhancing transparency and understanding) and to, a lesser extent, with numbers seven and eight (to maintain alliance solidarity and to help meet NPT obligations). I am less persuaded by numbers five, six and nine (lessening the risk from nuclear conflict should nuclear conflict break out, improving political relationships, and lessening military expenditure). I think that one reason is missing—many of us would advocate for arms control as an element of the wider rules-based international order (that is also under increasing pressure).

Military arsenals have long been subject to some restraints, whether ethical or legal. This has not prevented conflicts, but it has ensured that the use of certain weapons has been reduced which has, in turn, helped to reduce some of the human suffering caused by conflict. Strategic arms control can enhance stability, predictability, transparency and (mutual) understanding. From a deterrence perspective, these are all good things. Deterrence depends upon—at least a degree of—transparency and mutual understanding. For my threat to impose costs on (and thus deter) an aggressor to be credible, the would-be aggressor has to know what capabilities I have and to know something about the considerations that might make me employ them.

From both a theoretical and practical perspective, deterrence has not been weakened by the various arms control regimes adopted since the early 1960s—arguably, the reverse. Some ingenuity has had to be expended to validate nuclear weapons in the absence of testing, but this has not reduced expectations of the weapons working if they had to be employed, and so deterrence has held.

Lewis lists a number of ‘success modes’ for arms control. I agree with them but would see three as particularly significant: overlapping/congruent interests, a sense of urgency, and a shared leadership vision. At least in the United Kingdom, military support has been less salient—nuclear (and arms control) policy has been under civilian leadership for much of the post-Second World War period.

The ‘disarmers’ and the ‘deterriers’ (to borrow the taxonomy used in a previous discussion) share a desire to prevent major war between the major powers (which could become far more destructive than anything we have seen since 1945, even if it remained conventional). In the current difficult geopolitical conditions, we should be asking ourselves how we refine and develop the ‘success modes’ to encourage the relevant States to sustain (including remaining compliant with) existing arms control regimes and to contemplate new ones. In the case of the 1987 INF Treaty, the three success modes highlighted above certainly applied. Today, perhaps only the sense of urgency is apparent (or, at least, should be). But would it be impossible to try to define the elements of the other two? Since people are more likely to be prepared to accept limits on what they do not (yet) have than give up what they already have, perhaps the initial focus should be on identifying the overlapping/congruent interests and so on around novel systems.

Some Thoughts on **THE LOGIC OF STRATEGIC ARMS CONTROL:** — Three Perspectives —

Who are the proponents of strategic arms control? Why do they advocate it? What are their major assumptions? What are the important uncertainties of arms control? What is the relationship between strategic arms control and nuclear disarmament and nuclear deterrence? This paper, the fourth in UNIDIR's nuclear dialogue series, explores these questions building on the perspectives of US, Chinese and Russian experts—Lewis A. Dunn, Andrey Baklitskiy and Tong Zhao—and drawing in the views of diverse and informed participants in UNIDIR's Dialogue on Nuclear Disarmament, Deterrence and Strategic Arms Control.

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