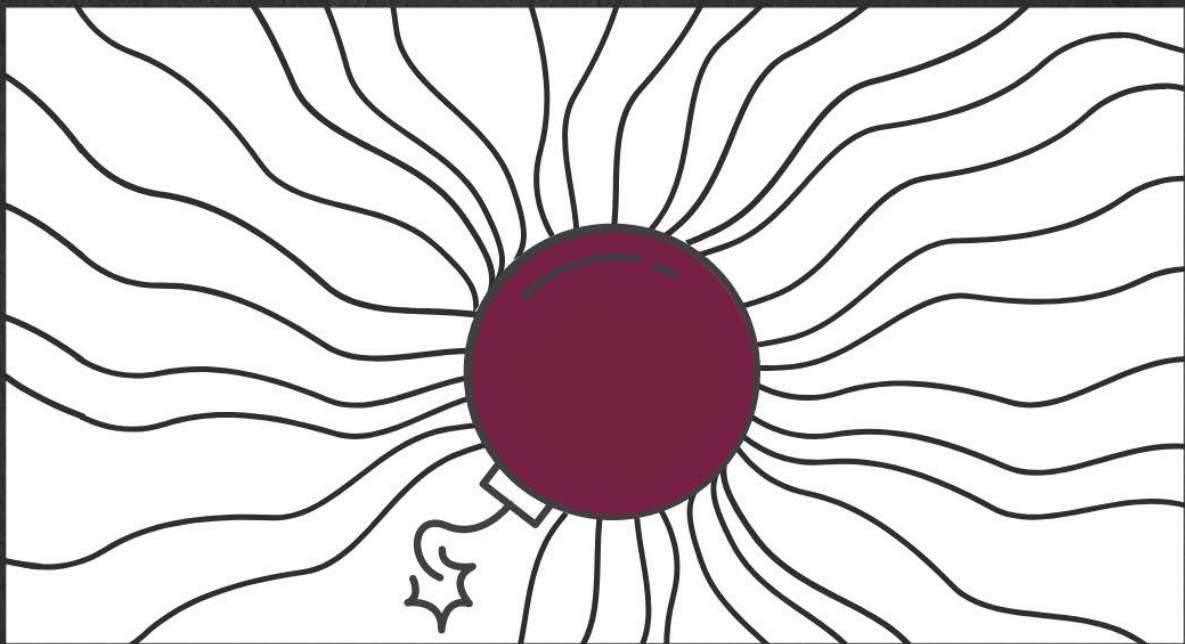


# THE LOGIC OF NUCLEAR DETERRENCE



Assessments, Assumptions,  
Uncertainties and Failure Modes

**TANYA OGILVIE-WHITE**



**UNIDIR** UNITED NATIONS INSTITUTE  
FOR DISARMAMENT RESEARCH

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## **ABOUT UNIDIR**

The United Nations Institute for Disarmament Research (UNIDIR) is a voluntarily funded, autonomous institute within the United Nations. One of the few policy institutes worldwide focusing on disarmament, UNIDIR generates knowledge and promotes dialogue and action on disarmament and security. Based in Geneva, UNIDIR assists the international community to develop the practical, innovative ideas needed to find solutions to critical security problems.

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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, complemented by what would come to be 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.

Launching the DDAC Dialogue amid the Covid-19 pandemic has created major obstacles to face-to-face meetings and international travel. It has led UNIDIR to experiment with new ways of promoting substantive, worthwhile expert interaction. To that end, this paper on the logic of nuclear deterrence represents the evolution of a bullet-point paper UNIDIR asked Tanya Ogilvie-White to prepare for the DDAC Dialogue. It sits alongside a companion piece by George Perkovich on the logic of nuclear disarmament. Together, these papers prompted brief, written comments from invited commentators and fruitful, subsequent discussion among all Dialogue participants at an online meeting on 30 September 2020.

We and the DDAC participants believe these papers would be of broader, public interest in stimulating thinking about the relationship between nuclear disarmament and nuclear deterrence as well as how to recraft strategic arms control and reenergize pursuit of nuclear disarmament. They will be augmented by other discussion papers and policy briefs the Institute is releasing from late 2020 as part of its ongoing nuclear dialogue series. As such, these papers are exploratory, not comprehensive, treatments of the themes they refer to. It should also be noted that the comments on each paper, reproduced at the end of each with permission of the commentators, were informal contributions that respond to earlier drafts of the papers rather than the latest, published versions. Nevertheless, these comments are included because they contain valuable insights into the dilemmas of nuclear weapons at the current time, including the breadth of perspectives involved.

Finally, we wish to thank the Institute's departing Director, Dr. Renata Dwan, for her key role in initiating and promoting the DDAC Dialogue, and for her important contribution to its discussions to date. We wish her the best in her future role at Chatham House.

John Borrie  
UNIDIR

Lewis A. Dunn



# **THE LOGIC OF NUCLEAR DETERRENCE:**

Assessments, Assumptions,  
Uncertainties and Failure Modes



## WHO ARE THE NUCLEAR DETERRERS?

Advocates of nuclear deterrence (nuclear deterrers) include members of the nuclear and wider defence and security policy communities in the nuclear-armed States, NATO, and other States that rely on extended deterrence. They also include strategic analysts, scientists, technicians, industrialists, and other groups in government and non-government sectors in these States, and to a lesser extent, in non-nuclear-weapon States. Most believe in the core assumptions of nuclear deterrence (that nuclear weapons help prevent major war, and cannot be dis-invented), but differ widely in their levels of strategic expertise and experience and in their perspectives on safe deterrence practices, the impact of strategic change on nuclear deterrence, the morality of the possession and use of nuclear weapons, and on how to reduce the risks of deterrence breakdown.

It would be unrealistic to expect to adequately reflect these many differences in a short paper on the logic of nuclear deterrence, or to provide a comprehensive assessment of how ideas about nuclear weapons have changed over time. Nevertheless, for the purposes of the UNIDIR Disarmament, Deterrence, and Strategic Arms Control Dialogue, it is useful to highlight some of the key commonalities and differences across the many perspectives on nuclear deterrence, and to draw attention to significant knowledge gaps and uncertainties. Doing so could help us to identify shared interests between nuclear deterrers and disarmers and assist in the urgent task of recrafting strategic arms control.

# 1. ASSESSMENTS OF NUCLEAR DETERRENCE

## NUCLEAR DETERRENCE AS A STRATEGIC NECESSITY

Many proponents of nuclear deterrence believe it is a strategic necessity, making major war between the great powers less likely and helping to keep political coercion in check.<sup>1</sup> They worry that, without the threat of annihilation hanging over it, an aggressive State might be more likely to succeed in imposing its will on other sovereign States, potentially without even resorting to force. The nuclear deterrers who espouse this view believe nuclear deterrence provides the best available tool to induce restraint, both political and military, and in doing so helps to uphold peace and preserve human life. In other words, they see it as a vital part of a global conflict prevention system. Other advocates of nuclear deterrence view it as part of a constantly evolving strategic predicament. On one hand, they think the world would probably have been safer had nuclear weapons never been invented; on the other hand, they believe the risks and dangers inherent in nuclear deterrence must be carefully managed until a viable plan for nuclear elimination can be universally adopted and successfully implemented.<sup>2</sup>

At the end of the Cold War, some nuclear deterrers argued the system needed an overhaul. They believed that the numbers of nuclear weapons should be reduced via reciprocal arms control agreements and unilateral cuts, and that it made strategic and economic sense to do so. However, some argued that it would not be safe to relinquish them below a certain (disputed) threshold, because they doubt that they can be dis-invented.

The argument that nuclear weapons are a strategic necessity has always been questioned by deterrence critics, some of whom contend that if nuclear deterrence is essential in preventing major conflict, then all States have a compelling reason to acquire nuclear weapons to deal with threats that cannot be met by other means. This, they argue, creates serious problems, including potentially encouraging and legitimizing further nuclear proliferation and undermining the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Their main concern is that a conflict prevention system based on nuclear deterrence is bound to fail at some point, primarily as a result of misperception or miscalculation, the risks of which increase as more actors acquire nuclear capabilities. They also note that nuclear deterrence can only work if all parties are motivated by a quest for survival, which would not be the case if the destruction of the adversary is valued above all else. Some champion 'common security' as an alternative security framework built around intention: the intention to transform the international system in a way that promotes security and peace for all. Their argument is that nuclear deterrence cannot serve this purpose because extreme threats founded on destructive capabilities perpetuate adversarial relations.

**The argument that nuclear weapons are a strategic necessity has always been questioned by deterrence critics.**

<sup>1</sup> See, for example, Jessica Cox, "Nuclear Deterrence Today", *NATO Review*, 2020, <https://www.nato.int/docu/review/articles/2020/06/08/nuclear-deterrence-today/index.html>.

<sup>2</sup> Brad Roberts, "On Adapting Nuclear Deterrence to Reduce Nuclear Risk", *Daedalus* 149:2, 2020, pp. 69–83, [https://doi.org/10.1162/daed\\_a\\_01790](https://doi.org/10.1162/daed_a_01790).



## **DETERRENCE CHOICES: VARIATIONS AND COMMONALITIES**

There are broad variations in the doctrines and postures of the nuclear-armed States, and in how they choose to characterize these. Certain fundamental choices stand out, including between nuclear doctrines that emphasize a) inflicting society-wide catastrophic damage versus inflicting more limited costs; b) pursuing minimal/retaliatory capabilities versus pursuing robust ('full-spectrum') capabilities that also potentially offer damage limitation, war termination and warfighting options; c) serving exclusively national priorities versus serving wider alliance goals (the provision of nuclear assurances to allies, known as 'extended deterrence'); and d) declaring the no-first-use of nuclear weapons under any circumstances versus declaring the retention of nuclear first-use in certain contexts.

Some of these choices are influenced by different interpretations of the principles of international humanitarian law (IHL). On one side, States that pursue what could crudely be called 'flexible deterrence' (Pakistan, Russian Federation, and the United States) can argue (and do, in the case of the United States) that their doctrines are guided by IHL, in that they provide options to conduct limited strikes on traditional military targets, rather than relying solely on striking population centres. This is presented as upholding the IHL principles of proportionality and discrimination in the use of force, at least in theory. On the other side, some of the States that pursue variations on minimum deterrence can argue that, in practice, their doctrines are more in line with the IHL principle of precaution. This is because declaratory and operational restraint play an important (although in some cases, possibly diminishing) role in the nuclear weapons policies of some States (notably China, India, and the United Kingdom). Both arguments have come under attack from disarmament advocates, who over the years have highlighted the risks of deterrence breakdown and escalation to nuclear war, including as a result of "the all too human instinct for retribution and revenge".<sup>3</sup>

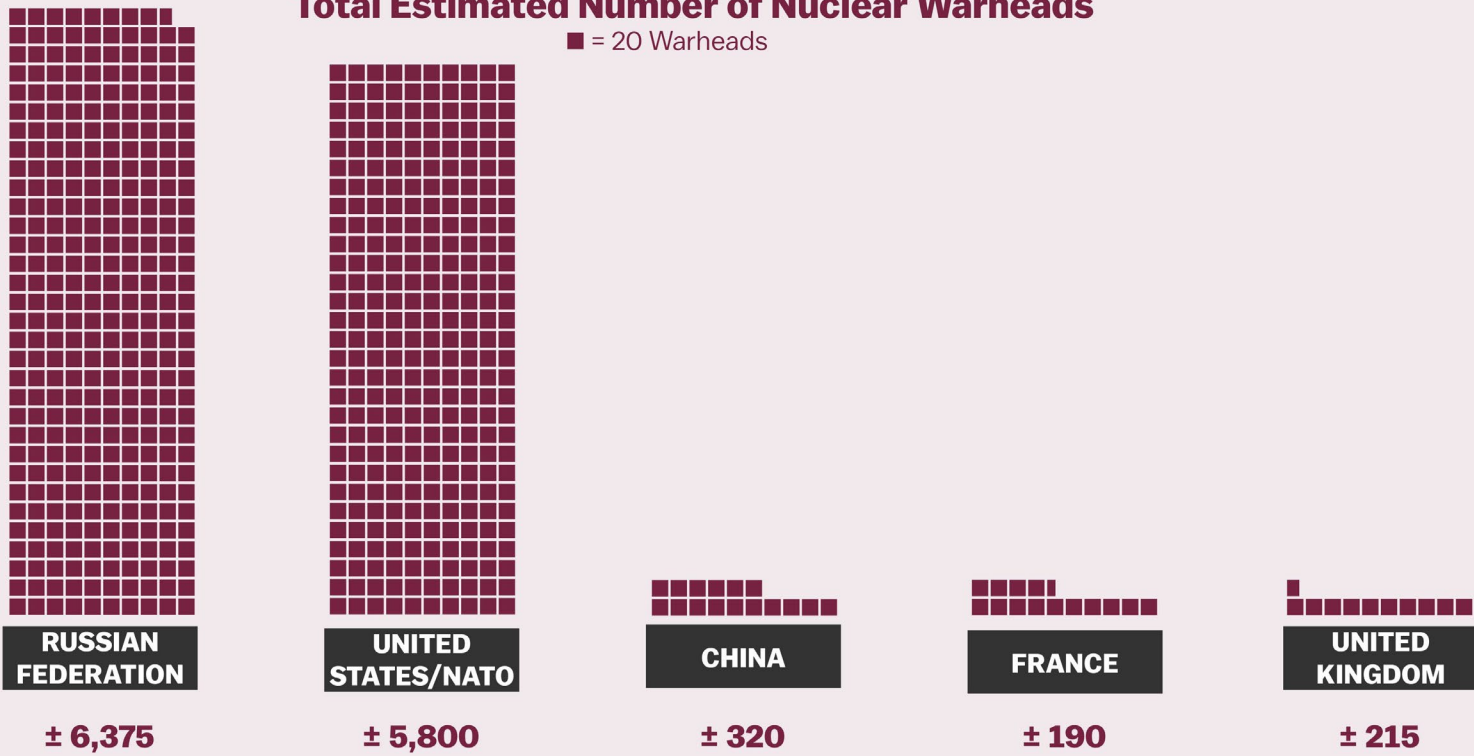
Available information on nuclear doctrine and posture varies significantly from one nuclear-armed State to another, with the highest levels of transparency in the United Kingdom and the United States, and the lowest in Israel and Democratic People's Republic of Korea. The following list summarizes the declared and widely reported or assumed characteristics of each nuclear-armed State's nuclear posture and doctrine, in descending order of estimated arsenal size.

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<sup>3</sup> Katherine E. McKinney, Scott D. Sagan and Allen S. Weiner, "Why the Atomic Bombing of Hiroshima Would be Illegal Today", *Bulletin of the Atomic Scientists* 76:4, 2020, pp. 157–165, p. 162, <https://doi.org/10.1080/00963402.2020.1778344>.

## Total Estimated Number of Nuclear Warheads

■ = 20 Warheads



**The Russian Federation's** deterrent (± 6,375 nuclear warheads) is directed at deterring aggression and existential threats via an extensive triad of capabilities (some of them novel) to provide second-strike and limited-use options (potentially including war termination). Some of the Russian Federation's nuclear weapons are deployed at a high level of operational readiness (that is, ready to fire within minutes of receiving an order), which is considered necessary for effective deterrence. The Russian Federation opposes US missile defences as destabilizing but is upgrading its own legacy missile defence system, for completion in 2025.

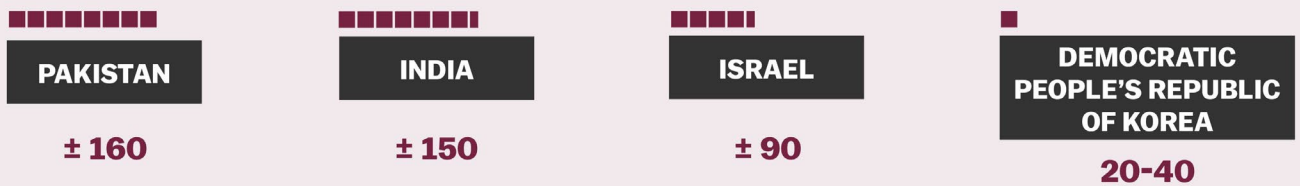
**The United States/NATO** deterrent (± 5,800 nuclear warheads) is intended to deter nuclear attack on the United States and nuclear/conventional attacks on allies via an extensive triad of nuclear capabilities that are tailored to provide secure second strike and offer limited nuclear-use options (restricted for use in response to a limited nuclear attack). Like the Russian Federation, some US nuclear weapons are kept ready to fire within minutes of an order to do so. US and NATO deterrence is backed up by ballistic missile defence. The United States is also assisting some non-NATO allies in the development of missile defence systems.

**China** (±320 nuclear warheads) is expanding and modernizing its nuclear arsenal and has a secure second-strike capability. None of the nuclear forces in its recently completed triad are thought to be fully deployed, and its nuclear doctrine emphasizes no-first-use and delayed retaliation. China strongly opposes US missile defence. It currently relies on Russian missile defence capabilities and it is reportedly planning its own missile defence systems, including a sea-based, mid-course system for deployment in the Asia-Pacific and Indian Ocean.

**France** (± 290 nuclear warheads) retains two legs of its nuclear triad, which it is modernizing, with some nuclear forces kept at a high level of readiness. France does not have a no-first-use policy and although its practice roughly fits within minimum deterrence, it might shift towards flexible deterrence—in that 1) there could be circumstances in which France would conduct a limited nuclear strike as a warning to an adversary that they have crossed a line; and 2) a policy announcement in February 2020 pledged a role for France's nuclear forces in non-NATO defence of the European Union.

## Total Estimated Number of Nuclear Warheads

■ = 20 Warheads



**The United Kingdom's** (± 215 nuclear warheads) nuclear triad has been reduced to one leg, its sea-based deterrent, which is dependent on US technology and is being modernized with US assistance. The United Kingdom is also reducing its operationally available warheads, which are deployed at a reduced alert status (requiring several days' notice to fire). The United Kingdom does not have a no-first-use doctrine. Its nuclear weapons can be used independently or as part of NATO.

**Pakistan's** deterrent (± 160 nuclear warheads), known as 'full spectrum nuclear deterrence', provides a role for nuclear weapons (including tactical) to deter conventional and nuclear attack and to ensure national survival. None of these warheads are thought to be deployed. Pakistan is expanding its nuclear arsenal and working on a sea-based nuclear capability to complete its nuclear triad. Officials are critical of India's development of ballistic missile defence.

**India** (± 150 nuclear warheads) is expanding and modernizing its nuclear triad with deterrence of Pakistan and China in mind. India's nuclear forces are not deployed, and its doctrine is one of qualified no-first-use (nuclear weapons could be used in response to attacks with chemical or biological weapons). India has reportedly completed the first developmental phase of a ballistic missile defence programme, which, if approved, could be installed by 2025.

**Israel** (± 90 nuclear warheads) practices opaque nuclear deterrence, neither confirming nor denying that it possesses nuclear weapons. Its arsenal (believed to comprise a triad) is intended as a last-resort hedge against regional threats and is bolstered by extensive air defences.

The **Democratic People's Republic of Korea's** (20-40 nuclear warheads?) deterrence practices are difficult to assess due to its intense secrecy, but it is believed to have developed nuclear devices to fit its ballistic missiles and to be expanding and improving its nuclear and missile capabilities. The regime claims its deterrent is intended to ensure regime survival, but some analysts fear it is developing a coercive nuclear warfighting capability.

## QUESTIONS ABOUT ETHICS AND MORALITY

Most nuclear deterrents avoid philosophical debate on the ethics and morality of nuclear deterrence, except on a very general level. Of those willing to engage, most believe nuclear possession and use, if managed properly, can be morally justified under specific conditions and within certain limits. But the debate over morality has become more difficult as nuclear weapons capabilities have expanded, knowledge about radiation and climate impacts have increased, the risk of deterrence breakdown has grown, and international legal frameworks have evolved to limit and delegitimize nuclear weapons possession and use.

Some nuclear deterrents (notably in defence circles in the United Kingdom) regard nuclear deterrence as a necessary evil that is extremely difficult to justify on moral grounds but is nevertheless a strategic reality in a world where nuclear weapons cannot be dis-invented. Other deterrence proponents doubt whether the *use* of nuclear weapons can ever be morally justified because it could lead incalculable suffering, but nevertheless support nuclear possession as a means of preventing major war.

Increasingly, opponents of nuclear deterrence acknowledge the genuine moral dilemmas faced by defence decision makers, but widespread and long-standing doubts over whether nuclear use can be proportionate or discriminate between military and civilian targets, as required under the laws of war, remain. Other entrenched criticisms include the accusation that double standards in the nuclear non-proliferation regime (whereby nuclear-armed States justify their own possession of nuclear weapons on strategic grounds, and yet deny them to others) is hypocritical and unjust.


**Widespread and long-standing doubts over whether nuclear use can be proportionate or discriminate between military and civilian targets, as required under the laws of war, remain.**

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## THE RISKS OF A NUCLEAR VERSUS A DISARMED WORLD

Proponents of nuclear weapons believe the risks of a disarmed world outweigh the risks of a deterrence world. Without fail-safe compliance, verification, and enforcement mechanisms, cheating and breakout are likely to be a problem in a nuclear-weapon-free world, with potentially catastrophic consequences. Many acknowledge that serious nuclear risks exist in today's deterrence world and argue that steps must be taken to address these—unilaterally via safer deterrence practices, and bilaterally/multilaterally via formal and informal arms control initiatives, cooperative threat reduction activities, and nuclear security arrangements. Many accept that new and emerging technologies increase nuclear dangers and argue that these risks can and should be managed.

Some advocates of nuclear deterrence question these assessments. They continue to believe that relying on nuclear deterrence is less risky than the alternatives, but they worry that growing strategic complexities pose new challenges to deterrence stability, with essential components of conventional and nuclear stability eroding or missing altogether. They caution that stable deterrence is dependent on the clear communication of limits of tolerance (or 'red lines'), which cannot be left until a crisis develops, and doubt whether sufficient understandings of these limits exist. Concerns tend to focus on the risk of deterrence breakdown in particular regions, such as Europe (where stability is impacted by US–Russian tensions and the collapse of Cold War arms control agreements), and East Asia (where nuclear and missile proliferation pressures are strong and no tradition of arms control exists).



These and other serious doubts have led a number of former nuclear deterrers, some of them prominent, to advocate in favour of nuclear disarmament. Where they once believed that stable deterrence was possible under Cold War conditions, they now warn that a combination of multipolarity, technological advances, and changes in nuclear doctrine have made deterrence breakdown more likely. However, most are cautious and circumspect in their nuclear disarmament advocacy, recognizing the dangers inherent in nuclear disarmament and preferring a conservative, step-by-step approach to reducing nuclear dangers.

This cautiousness frustrates the more progressive advocates of nuclear disarmament, who argue that because nuclear deterrence presupposes the aggressiveness of the States being deterred, the nuclear-armed States are locking humanity into a perpetual cycle of suspicion and insecurity. They warn that building security on this system, which relies on perpetuating fear through extreme threats, could too easily escape the control of decision makers, posing horrific and immoral dangers that amount to an existential threat.

## 2. KEY ASSUMPTIONS OF NUCLEAR DETERRENCE

The assumptions that underpin the logic of nuclear deterrence vary and continue to evolve as the strategic environment changes. Some of the core assumptions (a few of which are being challenged in debates over what defines 'modern deterrence' as opposed to 'classical deterrence'<sup>4</sup>) include the following.

### **NUCLEAR WEAPONS CANNOT BE 'DIS-INVENTED'**

Most nuclear deterrers believe nuclear weapons are unlikely to be relinquished until the international system is transformed and conflict is no longer a feature of international relations. Critics contend that this assumption is defeatist, fatalistic and perpetuates a particular worldview that is misleadingly presented as factual.

### **NUCLEAR WEAPONS HAVE REVOLUTIONIZED WARFARE**

Many proponents of nuclear weapons argue that nuclear weapons have fundamentally changed the nature of warfare due to their immense destructive power, making major war much less likely. But critics argue that this assumption exaggerates the impact of nuclear weapons on strategic calculations.<sup>5</sup> They contend that decision makers (including in nuclear-armed States) do not always behave in ways that deterrence theory would predict; some take strategic risks despite the threat of nuclear annihilation. Others contend that nuclear weapons have not revolutionized warfare across the board; rather, they have created a system of strategic apartheid, whereby destructive wars are still fought, but not on the territory of the nuclear-armed States.

### **ACQUISITION OF SECOND-STRIKE CAPABILITIES IS ESSENTIAL**

Nuclear strategists often argue that the acquisition of second-strike capabilities is essential to stable deterrence, because once this is achieved, nuclear-armed adversaries become mutually vulnerable, inducing caution even among the most powerful States. However, confidence in this assumption is eroding, with new technologies providing enhanced capabilities, including increased situational awareness. These changes mean that one side could become convinced it could successfully carry out a first strike, which could remove the brakes on restraint. Indeed, officials and strategic experts in China, the Russian Federation and elsewhere claim that US deterrence practices are increasingly driven by a quest for primacy rather than an acceptance of mutual vulnerability.<sup>6</sup> Expectations around 'nuclear learning' (whereby nuclear-armed States are expected to learn from experience, pursuing a path towards risk reduction and greater nuclear stability) are also being questioned. For example, the escalation risks of some limited-use options (such as tactical nuclear use to terminate a conventional war) were deemed too high towards the end of the Cold War, and yet these options are being revisited in today's more complex strategic environment.

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4 On the key assumptions of classical deterrence, see Michael Quinlan's correspondence in Tanya Ogilvie-White, *On Nuclear Deterrence: The Correspondence of Sir Michael Quinlan*, 2011. For insight into how and why some of these assumptions are changing, see Beyza Unal, Yasmin Afina and Patricia Lewis (eds), "Perspectives on Nuclear Deterrence in the 21st Century", Chatham House, 2020, <https://www.chathamhouse.org/sites/default/files/2020-04-20-nuclear-deterrence-unal-et-al.pdf>.

5 Keir A. Leiber and Daryl G. Press, *The Myth of the Nuclear Revolution: Power Politics in the Atomic Age*, 2020; Brendan Rittenhouse Green, *The Revolution that Failed: Nuclear Competition, Arms Control and the Cold War*, 2020.

6 Some US scholars have been arguing in favour of primacy. See, for example, Matthew Kroenig, *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters*, 2018.



## **NUCLEAR-ARMED STATES WILL SHOW SOME MEASURE OF RATIONALITY**

Although many question the rational actor assumption, most proponents of nuclear deterrence believe that even seemingly irrational leaders whose judgement is questionable can be deterred with nuclear weapons because, ultimately, their goal is to survive. Other nuclear weapons advocates have less confidence in this assumption but believe missile defence systems can potentially deal with the consequences of irrational behaviours. (This argument

**Most proponents of nuclear deterrence believe that even seemingly irrational leaders whose judgement is questionable can be deterred with nuclear weapons because, ultimately, their goal is to survive.**

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is rejected by critics who claim that missile defence systems are unreliable, too easily countered, and provoke arms racing behaviours. Such critics believe it is safer to assume rationality and work towards a clear and shared understanding of mutual vulnerability.) More recently, concerns have grown over the risk-taking behaviours of nuclear-armed friends and allies, not just adversaries. This is true of officials in some States with alliance commitments, who fear being pulled into conflicts in which they have no direct interest and little control. Indeed, alliance dynamics have a major impact on nuclear deterrence postures and doctrines (and vice versa), with the practices of extended deterrence and assurance potentially at the mercy

of irrational expectations and behaviours.

## **THERE IS SUFFICIENT UNDERSTANDING OF WHAT DETERS ADVERSARIES**

Many nuclear deterrers believe that there is sufficient understanding of what an adversary values and thus what would deter that adversary. Some strategists question whether these understandings are sufficient, especially in the absence of meaningful strategic dialogue.<sup>7</sup> Others contend that in conflicts involving 'failed States', non-State actors and other non-traditional security dynamics, it could be more difficult to assess what an adversary values, including whether that even includes survival.

## **TECHNOLOGICAL CHALLENGES CAN BE MANAGED BY UNILATERAL AND BILATERAL ACTIONS**

The more optimistic among the diverse group of nuclear deterrers believe that nuclear deterrence can be successfully tailored to meet the needs of the strategic environment, adapting as technological advances and breakthroughs occur. They believe that when new technologies threaten to undermine stable deterrence, unilateral actions (and, to a lesser extent, arms control agreements) can address these challenges. Many also argue that new technologies can be harnessed for safer deterrence practices and for more effective monitoring of arms control agreements. Not all deterrence proponents share this optimism, however, and some admit that this is a weak point in deterrence logic. Over time, technological breakthroughs have undermined some of the fundamentals of nuclear deterrence, including by compromising second-strike capabilities, and could do so again. Some nuclear deterrers are also genuinely worried about the impact that new technologies and new domains of warfare will have on other aspects of deterrence practice, particularly those with dual conventional–nuclear and military–civilian applications. It might be possible to adapt, but will adaptation be sufficiently fast and effective in all quarters?

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<sup>7</sup> Fiona S. Cunningham and M. Taylor Fravel, "Dangerous Confidence? Chinese Views of Nuclear Escalation", *International Security* 44:2, 2019, pp. 61–109, [https://doi.org/10.1162/isec\\_a\\_00359](https://doi.org/10.1162/isec_a_00359); Michael Kofman, Anya Fink and Jeffrey Edmonds, "Russian Strategy for Escalation Management: Evolution of Key Concepts", CNA, 2020, [https://www.cna.org/CNA\\_files/PDF/DRM-2019-U-022455-1Rev.pdf](https://www.cna.org/CNA_files/PDF/DRM-2019-U-022455-1Rev.pdf).

### 3. WHAT ARE THE MOST IMPORTANT UNCERTAINTIES?

Implicit in the above discussion on the logic of nuclear deterrence is the contention that it is not only disarmers who worry about the serious and growing risks of deterrence breakdown, conventional and nuclear. Nuclear deterrers point to numerous uncertainties about current and future deterrence practices, and many acknowledge major knowledge gaps that make our current strategic predicament increasingly dangerous and difficult to manage. Some of these uncertainties and knowledge gaps are discussed below (in no particular order).

There are growing uncertainties over how to achieve strategic balance in **a multipolar world of 'security trilemmas' and regional instability**.<sup>8</sup> It is a complicated strategic environment, in which actions can have unintended consequences. For example, steps by the Russian Federation and the United States to modernize their nuclear capabilities and adapt their deterrence practices are impacting China's choices and decisions, putting pressure on its minimum deterrence posture and its doctrine of no-first-use and delayed retaliation. More broadly, strategic stability could be more difficult to achieve in a world in which nuclear deterrence practices vary significantly from State to State and from one region to another, especially if nuclear signalling provokes unintended and unexpected responses.

**There are growing uncertainties over how to achieve strategic balance in a multipolar world of 'security trilemmas' and regional instability.**

Some scholars and practitioners believe that the asymmetric deployment of **missile defence systems** will be destabilizing, and in fact just the prospect of an effective missile shield has triggered renewed conventional and nuclear arms racing dynamics among the great powers. Ballistic missile defences were deemed necessary by some nuclear planners to respond to regional crises resulting from provocations by 'rogue' States but are having the unintended consequence of eroding confidence in great power second-strike capabilities. Many strategic analysts highlight the need to address this growing problem via new arms control agreements or other means.<sup>9</sup>

The re-emergence of strategic discussion on **nuclear warfighting** is also causing uncertainty.<sup>10</sup> Efforts to adapt and tailor nuclear deterrence to changing strategic conditions have seen the return of debates over limited nuclear use, with an enhanced role for tactical nuclear weapons in regional deterrence. Some strategists worry that the fundamentals of how to harness nuclear deterrence for conflict prevention might not be sufficiently understood or prioritized by key decision makers.

8 Gregory D. Koblentz, "Strategic Stability in the Second Nuclear Age", Council Special Report No. 71, 2014, <https://www.cfr.org/report/strategic-stability-second-nuclear-age>.

9 Tong Zhao, "Narrowing the U.S.–China Gap on Missile Defense: How to Forestall a Nuclear Arms Race", Carnegie Endowment for International Peace, 2020, <https://carnegieendowment.org/2020/06/30/narrowing-u.s.-china-gap-on-missile-defense-how-to-forestall-nuclear-arms-race-pub-82224>.

10 Joseph D. Becker, "Strategy in the New Era of Tactical Nuclear Weapons", *Strategic Studies Quarterly* 14:1, 2020, pp. 117–140, [https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-14\\_Issue-1/Becker.pdfv](https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-14_Issue-1/Becker.pdfv); Manpreet Sethi, "Limited Use of Nuclear Weapons: Political and Military Implications", Institute of Peace and Conflict Studies, 2018, [http://www.ipcs.org/comm\\_select.php?articleNo=5537#](http://www.ipcs.org/comm_select.php?articleNo=5537#).

There is a great deal of uncertainty over the potential impact that **technological breakthroughs** could have on nuclear deterrence. This includes developments in precision non-nuclear and hypersonic weapons, uncrewed aerial vehicles, directed energy weapons, and artificial intelligence and other disruptive technologies that can undermine command, control, communication, and intelligence and critical infrastructure. Some of these technologies could have a profound impact on the strategic environment, particularly those that impact situational awareness, speed, accuracy, and survivability.<sup>11</sup>

There are fears that the ramping up of strategic competition in **new warfighting domains**, including space, cyberspace and unforeseen realms, could undermine both conventional and nuclear deterrence, including through asymmetric escalation or other actions in other domains.<sup>12</sup> In today's strategic environment, identifying targets (such as the target of a hypersonic missile), and accurately assessing threats (such as the intention behind an anti-satellite fly-by in a crisis) are more complex tasks, running a higher risk of error, unintended conflict and escalation.

**The collapse of arms control agreements** (such as the Anti-Ballistic Missile Treaty and the Intermediate Nuclear Forces Treaty) has unleashed old arms-racing dynamics and generated new ones, and it is far from clear how these can be constrained. It is widely accepted that the arms control architecture that was developed at the end of the Cold War is inadequate in today's multipolar, multidomain environment, but the complexity of the task (plus complacency, suspicion and numerous other factors) have prevented it from being updated.<sup>13</sup>

One of the greatest uncertainties is whether nuclear deterrence can be stable in an environment of growing **information complexity**, in which the challenge of assessing large amounts of information (much of it non-linear, due to multipolarity and shared military–civilian domains), is combined with defence strategies that emphasize gaining an early advantage in strategic competition.<sup>14</sup> Second-strike vulnerabilities could increase the incentives for States (including great powers) to 'move first and move fast', and the risks may be underappreciated, especially as crises move rapidly to confrontation and outright conflict.

Although there has been some important new thinking on the subject (particularly in relation to advancing nuclear disarmament) there remains a great deal of uncertainty over the most effective **modes of restraint** in today's world, from declaratory policies and doctrines to strategic capabilities, force structures, operational practices and more.<sup>15</sup> For example, is there a greater role now for declaratory statements than there was in the past? During the Cold War, influential deterrence thinkers dismissed no-first-use declarations as illogical (because they reduce the fear that coercion and aggression could be met with a decisive and costly response), or as lacking credibility (because they can easily be abandoned). Other nuclear deterrents argue that a solemn no-first-use pledge can reduce nuclear risks and help to create an environment more conducive to constructive dialogue.

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11 John Borrie, "Strategic Technologies", Nuclear Risk Reduction Policy Brief No. 2, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/03>.

12 Erik Gartzke and Jon R. Lindsay (eds), *Cross-Domain Deterrence: Strategy in an Era of Complexity*, 2019.

13 Angela Kane and Noah Mayhew, "The Future of Nuclear Arms Control: Time for an Update", Development and Peace Foundation, 2020, [https://tda.org/assets/files/resources/policy-briefs/t-pb-86\\_angela-kane-and-noah-mayhew\\_the-future-of-nuclear-arms-control.pdf?v=1](https://tda.org/assets/files/resources/policy-briefs/t-pb-86_angela-kane-and-noah-mayhew_the-future-of-nuclear-arms-control.pdf?v=1).

14 Rebecca Hersman et al., "Under the Nuclear Shadow: Situational Awareness Technology and Crisis Decisionmaking", Centre for Strategic and International Studies, 2020, <https://www.csis.org/analysis/under-nuclear-shadow-situational-awareness-technology-and-crisis-decisionmaking>.

15 Lewis A. Dunn, "The Strategic Elimination of Nuclear Weapons: An Alternative Global Agenda for Nuclear Disarmament", *The Nonproliferation Review* 24:5–6, 2017, pp. 401–435, <https://www.tandfonline.com/doi/abs/10.1080/10736700.2018.1440733>.



Some nuclear deterrents worry that **new forms of influence** (particularly those using digital platforms) could undermine nuclear deterrence, complicating effective crisis management, fuelling competition and rivalry, and sowing mistrust.<sup>16</sup> It is now easier for publics to be swayed by one-sided arguments, misinformation, and deliberate subversion. As a result, some deterrence proponents are calling for improved public communication and information management, including to improve public understanding of and support for deterrence practices.

Growing **conventional military competition** among the great powers and their regional allies is raising questions among some scholars and nuclear deterrents about the conventional–nuclear nexus, including how the changing balance of conventional and nuclear capabilities in each nuclear-armed State influences the dynamic process of nuclear strategy formulation and strategic decision-making more broadly.<sup>17</sup> Among other concerns is the so-called stability–instability paradox: scenarios in which mutual vulnerability at the nuclear level emboldens political coercion and military aggression at the conventional level, with the potential for crisis escalation. Examples include the tensions between the Russian Federation and NATO over parts of Eastern Europe, and between China and the United States and its Asian allies over the Taiwan Strait and South and East China Seas. In both cases, changing alliance dynamics increase strategic complexity and uncertainty.

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16 Rebecca Hersman, “Wormhole Escalation in the New Nuclear Age”, *Texas National Security Review* 3:3, 2020, pp. 90–109, <https://tnsr.org/2020/07/wormhole-escalation-in-the-new-nuclear-age/>.

17 Kristin Ven Bruusgaard, “Russian Nuclear Strategy and Conventional Inferiority”, *Journal of Strategic Studies* 43:6, 2020, pp. 1–33, <https://www.tandfonline.com/doi/full/10.1080/01402390.2020.1818070>.

## 4. HOW COULD NUCLEAR DETERRENCE BREAK DOWN?

UNIDIR has developed a useful framework for understanding nuclear risks, which can be helpful in identifying some of the potential failure modes of nuclear deterrence.<sup>18</sup> The four risk pathways include doctrinal, escalatory, accidental and unauthorized nuclear use. The framework can be adapted to explain modes of deterrence breakdown: doctrinal use refers to the pre-planned, calculated first use of nuclear weapons in a conflict or non-conflict situation; escalatory use refers to nuclear conflict resulting from misperception and miscalculation (which could begin with a breakdown in conventional deterrence); accidental use refers to nuclear use that occurs as a result of technical malfunction; and unauthorized use refers to nuclear use that is not sanctioned by a recognized government. The following focuses on the first two.

### DELIBERATE DOCTRINAL USE

Doctrinal use of nuclear weapons refers to their deliberate use by a nuclear-armed State, in line with that State's declared nuclear policy. In terms of deterrence breakdown, the relevant categories of doctrinal use could be in 'first strike' (an out-of-the-blue decapitation strategy, which is not part of any current nuclear-armed State's nuclear doctrine), pre-emptive use in a crisis (which is unlikely but possible, especially in a situation of asymmetric second-strike vulnerabilities resulting from a mix of new technologies), or first use in retaliation against a major non-nuclear attack (the most likely doctrinal mode of deterrence breakdown, as war-gamed in flexible response strategies).<sup>19</sup> Second strike (retaliation against a nuclear attack) is not included here, on the basis that nuclear deterrence has already broken down. Some nuclear deterrers argue that the chances of deterrence breakdown occurring as a result of deliberate first use in response to a non-nuclear attack (in an attempt to swiftly terminate conflict, for example) already potentially exists in the US–Russia and India–Pakistan nuclear dyads, and could grow if more States acquire tactical nuclear weapons. For example, if it had the capability, the Democratic People's Republic of Korea might consider limited nuclear use in response to a US conventional attack.

Many proponents of nuclear deterrence would argue that the risks of doctrinal breakdown are exaggerated, that flexible response doctrines offer a better pathway to stable deterrence because the nuclear threats on which they are based are more credible. They argue that deterrence breakdown can be avoided by communicating red lines in a clear and timely manner, and by demonstrating resolve. Other nuclear deterrers advocate the removal of tactical and lower yield nuclear weapons via negotiated arms control agreements. But most nuclear-armed States would reject this proposal on strategic grounds (it could hand an advantage to cheats, non-signatories and States that have conventional superiority).

<sup>18</sup> Wilfred Wan, "Nuclear Risk Reduction: A Framework for Analysis", in Wilfred Wan (ed.), *Nuclear Risk Reduction: Closing Pathways to Use*, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/01>.

<sup>19</sup> Wilfred Wan (ed.), *Nuclear Risk Reduction: Closing Pathways to Use*, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/01>.



## UNINTENDED ESCALATION

Potential escalatory modes of deterrence breakdown are preoccupying many of today's nuclear deterrers, who acknowledge that technological developments and strategic complexity have the potential to trigger nuclear use resulting from miscalculation and misperception.<sup>20</sup> Dual conventional–nuclear and military–civilian applications of technology are a major source of vulnerability, as are new domains of warfare. It is unclear whether no-first-use and other doctrinal commitments would hold under conditions of confusion and high stress, whether or how the restraint derived from the shared terror of annihilation can be maintained in complex and dynamic environments, or whether nuclear escalation could be avoided if the unauthorized or accidental use of nuclear weapons triggered an international incident. These risks have led some nuclear deterrers to question the continuing logic (and, less often, morality) of nuclear deterrence, while others are optimistic the risks can be managed.

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20 James M. Acton, Tong Zhao, and Li Bin, "Reducing the Risks of Nuclear Entanglement", Carnegie Endowment for International Peace, 2018, <https://carnegieendowment.org/2018/09/12/reducing-risks-of-nuclear-entanglement-pub-77236>; Corentin Brustlein, "The Erosion of Strategic Stability and the Future of Arms Control in Europe", Proliferation Papers no. 60, IFRI, 2018, [https://www.ifri.org/sites/default/files/atoms/files/brustlein\\_erosion\\_strategic\\_stability\\_2018\\_3.pdf](https://www.ifri.org/sites/default/files/atoms/files/brustlein_erosion_strategic_stability_2018_3.pdf).





## **CONCLUDING THOUGHTS ON DETERRENCE, DISARMAMENT AND ARMS CONTROL**

Perspectives on the logic of nuclear deterrence differ widely within and among States and across regions, but a common thread runs through them—preventing deterrence breakdown in a multipolar, increasingly complex world is an urgent task, requiring comprehensive, mutual understandings of risks and the development of new tools to address them. Although often expressed differently, a similar thread runs through disarmament debates, providing scope for convergence over the development of new risk reduction and arms control measures to maintain strategic stability and prevent nuclear use. This leaves us with some interesting questions: What are the knowns and unknowns in our understanding of the risks of deterrence breakdown? To what extent do mutual understandings of these risks exist? What tools are needed to help maintain near-term and longer-term ‘strategic stability’? Why are current nuclear risk reduction and arms control initiatives struggling to advance, despite a growing sense of urgency? And, which arms control proposals, past and present, offer the most promise of progress?



# **A COMPENDIUM OF COMMENTS ON THE LOGIC OF NUCLEAR DETERRENCE**

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 interactive meeting held on 30 September 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, with permission of the commentators, were offered in advance of the final version of Dr. Tanya Ogilvie-White's published logic of deterrence nuclear paper, which was revised in parts to reflect some of this feedback.

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

## COMMENT BY NOBU AKIYAMA <sup>1</sup>

Dr. Ogilvie-White's paper provides an excellent list of questions and issues to be addressed in discussion on the linkage between nuclear deterrence and nuclear disarmament. Here I wish to supplement that list with some additional questions. These questions are not exhaustive or comprehensive.

### OVERALL

1. It is necessary for us to discuss the connectivity among deterrence, arms control, threat reduction and disarmament.

### ISSUES RELATED TO A VISION OF A WORLD WITHOUT NUCLEAR WEAPONS

1. Will 'deterrence' endure in a 'world without nuclear weapons'?

Is it reasonable to assume that a departure from dependence on nuclear deterrence means the realization of deterrence without nuclear weapons, and that the act of deterrence itself remains a form of relationship between States in a world without nuclear weapons? **Is it possible to establish mutual deterrence without nuclear weapons in a way that would not lower the threshold for the use of force?** If so, what can replace nuclear weapons' necessary conditions and functions? Alternatively, is it realistic to envision a world where deterrence would no longer be a mode of State-to-State relationships?

2. Legality regarding nuclear weapons and doctrines
  - a. Does stricter legality in nuclear policy contribute to extending the record of non-use of nuclear weapons and reducing the utility of nuclear weapons in security policy?
  - b. Is there any scenario of the use of nuclear weapons which is consistent with international humanitarian law and international law in time of war or the Geneva Conventions and their additional protocols—specifically regarding the principles of proportionality, necessity and protection of civilians, and the prohibition of indiscriminate bombing?
  - c. Should nuclear-armed States be requested to disclose whether their nuclear doctrine and nuclear employment policy are developed in compliance or are consistent with international law?
3. How would the reliability of deterrence/coercion change as the record of non-use gets longer?

**As the record of non-use of nuclear weapons grows, could the plausibility of threats of use of nuclear weapons by the adversary diminish,** and, if so, would that assessment increase the likelihood of escalating conflicts that could lead to the use of nuclear weapons?

**Issues regarding stability in a multipolar, complex world: Would these arguments lead to scepticism of the credibility of nuclear deterrence and eventually to less reliance on nuclear weapons, or would they reinforce robust nuclear policy to overcome these uncertainties?**

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<sup>1</sup> Dr. Nobu Akiyama is a Professor at the Graduate School of Law, School of International and Public Policy, Hitotsubashi University in Japan. The views expressed here are his own.

## 1. Asymmetric strategic goals with different rationalities among major powers

### a. Difficulty in finding an enduring equilibrium among three (or more) players.

In theory, it makes more sense for each of the three players in a non-cooperative dilemma game to defect rather than to cooperate. Conventionally, rational players would rather engage in an arms race than agree not to. That view changes when they look ahead. Players place more emphasis on the value they will gain in the future—they would rather be guaranteed a smaller payback than risk gaining nothing or losing. Cooperation then becomes possible. That is why the United States and the Russian Federation agreed to act in the past. The game repeats endlessly, and the devastating power of nuclear weapons makes the cost of defection high—a nuclear first strike from the other.

**In a three-way game**, the outcome might be different. **It is harder to find a stable equilibrium** in the first place. And **it is better for two to form a coalition against the other, even in the long run**. Thus, each player fears the others teaming up against it. When trust is missing, players prefer to stay in competition rather than reach agreement.

The key to trilateral arms control is to ensure that the isolated party benefits from signing up. It is unclear whether the confidence-building and verification measures associated with existing arms-control treaties are sufficient to do that, and whether the level of transparency that could be required is acceptable for all three.

### b. The United States, the Russian Federation, and China have different strategic visions in terms of the geographic scope (sphere of influence) and the goals set for pursuing vital interests, and they define their strategic interests with different utility functions.

**If three major powers with different strategic visions have different strategic utility functions, the threshold for the use of nuclear weapons, types of nuclear weapons that they need, and doctrines of use of nuclear weapons would also be different. (Additionally, can we predict their behaviour with an identical rationality assumption?)** This consideration suggests that each has designed different escalation ladders. It also has implications for conventional thinking about strategic stability, which has accepted mutual vulnerability and defined stability as an equilibrium of capabilities at the 'strategic level'. (In some scenarios, there will be no consensus on what the 'strategic level' means.)

### c. The idea that the use of nuclear weapons would not necessarily have catastrophic consequences has traditionally existed, as seen in the 'flexible response' strategy during the Cold War. Now, in response to recent changes in the international environment, including power shifts among the major powers, some States consider that the limited use of nuclear weapons could be a way to prevent escalation of conflict (or intervention by other powers). But **how credible are scenarios of escalation that would NOT lead to a catastrophic consequence?**

**d. Emerging technologies** blur the boundaries between nuclear, conventional, and new domains such as cyber and space, both in terms of the ability to attack and the value to be defended. Emerging technologies such as hypersonic glide vehicles, artificial intelligence, robotics, and remote sensing can improve the capabilities of conventional weapons to achieve strategic missions and increase their survivability. Such qualitative improvements will allow conventional weapons to take on roles that have traditionally been expected of strategic nuclear weapons. **This complication of the escalation ladder blurs the division of roles between nuclear powers and non-nuclear allies within an alliance. (Or, one could say, it encourages increased integration: from extended deterrence to alliance deterrence.)** In that case, not only the great powers but also non-nuclear allies could become primary stakeholders in arms control.

2. Tailored deterrence and tailored arms control: global–regional nexus

- a. The current trend is that each region, including Europe, East Asia, South Asia, and the Middle East, reflects a unique strategic environment and dynamics. Thus, (nuclear) deterrence posture needs to be constructed in a way that adapts to the security dynamics of each region. In turn, strategic stability needs to be pursued at the regional level. In that case, **how does global US–Russian strategic stability based on mutual deterrence interact with the strategic stability of each region?** And, if a **crisis is escalating across regions** with different strategic stability modalities and tailored deterrence architectures, such as East and South Asia, or East Asia and Europe, which crisis management principle (the principle of crisis stability as a part of strategic stability) should be used to control escalation?
- b. **Is an arms control regime that does not address insecurity concerns of allies and aims only to achieve balance among the major powers sustainable?** Conversely, does the combination of global competition among the major powers and regional security structures that include non-nuclear allies make US allies obstacles to the establishment of arms control among nuclear-weapon States?

One issue not really touched upon in Dr. Ogilvie-White's insightful paper is nuclear signalling. Flexible deterrence—using the language of the paper—covers a wide range of issues and this range is only getting wider. For example, the 2018 US Nuclear Posture Review states that “The United States would only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the United States, its allies, and partners”, without really defining either ‘vital interests’ or ‘partners’. Conversely the Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence include a broad list of things which the Russian Federation deters with nuclear weapons.

The broad scope of deterrence pushes nuclear-weapon States to send specific messages with their nuclear assets while diverse and flexible arsenals enable such signalling. For example, strategic bomber patrols can train for missions, demonstrate readiness of the air leg of the triad, reassure allies, signal red lines to adversaries, simply harass opponents, or do all of the above at the same time. As such actions are often seen as ‘cost-free’ (akin to economic sanctions), they are embraced in the capitals. The US Dynamic Force Employment strategy of ‘strategic predictability and operational unpredictability’ is one of the clearest examples. The problem with such an approach is that using strategic assets for tactical reasons waters down the signalling or can send the wrong signal altogether. Two recent flights of US nuclear capable B-52 aircraft next to Russian borders in the Ukrainian airspace were met with condemnation in Moscow. But apart from an ‘in-your-face’ statement what were they really signalling? Was it a statement of US readiness to support Ukraine with nuclear weapons in a possible conflict with the Russian Federation?

And nuclear signalling is not without costs either. For now, Moscow has abstained from symmetrical response to US flights (which could include sending Russian bombers to the coasts of the mainland United States), though Russian bombers did perform a 20,000 km flight recently. However, US complaints over ‘unsafe’ and ‘unprofessional’ intercepts could be just that—the Russian Federation pushing back against the increased US presence at its borders. With each side believing it is acting in response to the provocations of the other, there is ample space to ramp up the pressure. As examples from the Cold War show, close encounters can lead to collisions and loss of equipment and human life. Having nuclear-capable systems in the mix increases chances of unwanted escalation, as mentioned in the paper.

While the situation in Asia, where the United States is also contesting the Chinese air defence identification zone in the East China Sea, is somewhat different from that in Europe, where the focus is mainly on deterring the Russian Federation, the main argument stands. Instead of establishing (or re-establishing) deterrence, such signalling can lead straight to the conflict, which no one wants.

Nuclear-weapon States should make sure that nuclear assets are only used when there is a conscious decision to send a message and always consider how their adversaries might react to such signalling.

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<sup>1</sup> Andrey Baklitskiy is with the MGIMO University in Russia. The views expressed are his own.



Dr. Ogilvie-White's paper is a useful basis for discussion of nuclear deterrence in 2020, since it provides a balanced view of the logic underpinning nuclear deterrence and outlines the assumptions behind some of the existing nuclear postures, as well as their critics' arguments. Even though dozens of discussions could start from this paper, this short comment piece will only focus on four points.

**Extended deterrence is insufficiently discussed.** The specific characteristics and challenges associated with extended deterrence postures are not discussed in the paper. However, one could easily argue that recent debates on nuclear deterrence policies have been driven much more by the requirements of extended deterrence than by those of central deterrence. Indeed, some issues rightly highlighted in the paper—such as the importance of flexibility, the renewed role of non-strategic nuclear weapons, ballistic missile defence, 'warfighting' doctrines, etc.—would barely make any sense were it not for the United States' commitment to protect allies, or for the fear by some that some other countries may attempt to exploit the shadow cast by their nuclear arsenal beyond their national territory to change the status quo.

**The distinction between 'flexible' and 'minimum' deterrence, although not new, lacks nuance.** Flexibility comes in many forms and is not just a matter of capabilities providing options for limited use. What about the differences in roles given to nuclear weapons? How clearly communicated are the principles underpinning a State's nuclear policy? The author seems to conflate the ability to conduct limited nuclear use with the possession of non-strategic nuclear weapons. But one can go without the other. Whether or not it is their policy to do so, all nuclear-armed States can use nuclear weapons selectively—it does not require a non-strategic weapon. It is explicit in several policies but remains a distinct possibility for all others, nonetheless. Furthermore, having non-strategic nuclear weapons does not mean having battlefield nuclear weapons meant to provide a military advantage in combat, nor does it mean having a 'nuclear war-fighting doctrine'.

**Ballistic missile defence (BMD) ambitions matter less than broader non-nuclear counterforce options.** BMD is mentioned several times in the characterization offered of various countries' doctrines (in the first three pages of the paper). The assumption seems to be that BMD and nuclear deterrence are intrinsically related. However, as of now, all BMD policies remain limited in ambition, and none aims at undermining the deterrent of other established nuclear weapon countries. It is correct that US BMD projects are an important concern for China and the Russian Federation that, to some extent, influences their nuclear force developments, but the same could be said of conventional capabilities. If anything, BMD should be seen in the broader context of the rise of non-nuclear counterforce capabilities (whether offensive or defensive, kinetic or not, prompt or not, etc.).

**It is urgent to think about forms of restraint in nuclear and strategic policies.** Even though it is not necessarily always visible, restraint on the part of the nuclear-armed States comes in many forms, from unilateral cuts in force structure to declaratory policies. Even though a no-first-use pledge is an element of this debate, it is a narrow topic in a discussion that should be much broader, and touch upon all forms of restraint that have existed or would make sense in the future (declaratory policies and doctrines, force structures and capabilities, operational practices, etc.).

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<sup>1</sup> Dr. Corentin Brustlein is the Director of the Security Studies Center at the French Institute of International Relations in Paris, France. The views expressed here are his own.

### **WHO INDEED ARE THE ‘NUCLEAR DETERRERS’?**

The paper delineates advocates of nuclear deterrence from advocates of nuclear disarmament and highlights some of the differences of views within the group of ‘nuclear deterrers’. Still, I would argue that many scholars and practitioners belong in both camps—advocating both nuclear deterrence and disarmament. Most scholars and practitioners are aware of the shortcomings of deterrence, many of which are presented in this paper. Still, some of the assumptions of ‘the deterrers’ are in part outdated and stylized. I think a caricatured representation of the virtues of nuclear deterrence does our debate a disservice, in that it will not be representative of the views of a majority of the people working to craft or improve contemporary deterrence policies. Below are some of the caricatures that I would question.


Do all ‘nuclear deterrers’ believe that nuclear weapons help to prevent major war? Or is their key premise merely that they cannot be ‘dis-invented’, and so that they constitute a reality that we must manage? Some ‘deterrers’ (depending on how you define this category—some of those who study, examine, or advocate nuclear deterrence as security policy) also believe that the dangers of nuclear deterrence are significant, that the system may fail at some point, and that nuclear deterrence strategies contain inherent dangers that must be managed. Some deterrers believe that the world could have been safer without nuclear weapons, but recognize that this is not the world we live in, and that ours is far from it (there exists no viable solution or plan for how to achieve this goal). They may thus question several of the assumptions presented here undergirding the theory of nuclear deterrence but still argue that a most prudent policy is not to expand or to disarm but to manage the current situation. Some argue that nuclear deterrence is not so much a strategic necessity as a strategic *predicament*.

Do all nuclear deterrers believe that major war between the major powers is unthinkable and that it helps keep political coercion in check? If you read the 2018 Nuclear Posture Review of the United States (written by people who should fit squarely within the nuclear deterrers category), you get an impression that part of the logic undergirding current US nuclear weapons policy indeed is that war among major powers is conceivable and that a key concern is that nuclear weapons will be used for political coercion. Nuclear deterrers, I would argue, do not necessarily believe that the risks of a disarmed world are as significant as those of a world with nuclear weapons—at least some of them believe that the viability of getting disarmament is low. Although the paper does present some of the nuances of the views of deterrers, it retains the dichotomy that you either belong in one or the other camp. This raises the question of what assumptions may or could characterize both groups?

Some of the assumptions regarding nuclear deterrence are somewhat outdated—there is a significant debate about whether nuclear weapons have revolutionized warfare. The assumption that there is sufficient understanding of what deters adversaries also is undermined by current debates on Russian and Chinese nuclear doctrine. A key characteristic regarding the assumptions of nuclear deterrence is uncertainty—few argue that nuclear deterrence is fool proof.

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<sup>1</sup> Kristin Ven Bruusgaard is a post-doctoral fellow at the Department of Political Science of the University of Oslo in Norway, and she is part of the Oslo Nuclear Project. The views expressed are her own.



I would argue that creating a dichotomy between deterrers and disarmers in some sense creates a false delineation between the groups, and that it does not help in building bridges across these communities. If the 'deterrers' are a group with more significant variation in their views, might it be easier to find common ground with the alternate group, 'the disarmers'? To determine this, the views of the 'disarmers' would have to be more clearly spelled out; and a comparison of the views of the groups could be fruitful. For example, what would be the view of the 'disarmers' on the uncertainties that the 'deterrers' identify: the impact of multipolarity, missile defence, nuclear warfighting doctrines (what may substitute nuclear weapons if they were abolished), technological breakthroughs and new warfighting domains, information complexity, uncertainty about restraint and public opinion. A more detailed discussion of both groups, their underlying assumptions and what their differences really are would tease out, to an even greater extent, where there may be room for common understanding and increased insights regarding further progress towards nuclear disarmament.

## COMMENT BY USMAN JADOON <sup>1</sup>

My comments refer to specific statements in the paper. The page number is noted, and the statement or overall point to which my comment refers is quoted:

p. 2: “Most [deterriers] believe ... that nuclear weapons ... cannot be dis-invented”—This, in my view, is a separate argument used by disarmament pessimists, which might not necessarily be linked to deterrence optimists. I, for instance, believe in the value of nuclear deterrence but do not think that nuclear weapons can never be abolished.

p. 2: “it would not be safe to relinquish [nuclear weapons] below a certain (disputed) threshold, because they cannot be dis-invented”—That is hedging, done due to the lack of global agreement and continued strategic–military need for retaining nuclear weapons.

p. 3: Reference to Pakistan in section “a) Flexible deterrence”—Not correctly categorized.

p. 3: “Pakistan’s deterrent”—Pakistan’s case does NOT qualify as flexible deterrence because of the modest numbers and several other factors ignored by the author. Should be moved to the section below.

p. 5: “Pakistan’s deterrent”—Many critical factors are at play in Pakistan’s strategic calculus, including (1) India’s superior conventional forces and dangerously aggressive doctrines; (2) unresolved bilateral disputes such as Jammu and Kashmir, and India’s intransigence in resolving them through peaceful means; (3) India’s growing alliance with the United States and other Western powers, which are directly aiding its nuclear and conventional arms build-up; and (4) India’s hegemonic designs and aspirations to emerge as a regional/global power.

p. 4: “[France] might shift towards flexible deterrence”—Then France should be mentioned in the other category.

p. 5: “India [deterrence practice]”—Questionable and factually incorrect assumptions. Ignores numerous recent relevant developments, e.g. statements from senior Indian officials questioning so-called no-first-use policy; cannisterization of missiles and operationalization of nuclear-armed submarines, thereby negating academics’ unfounded belief regarding non-deployment of nuclear forces. Also, plans to develop/test a true intercontinental ballistic missile mean that India also intends to deter countries other than China and Pakistan.

p. 5: “Israel [deterrence practice]”—Israel is a clear case of a State exercising flexible deterrence.

p. 8: Under “What are the key assumptions of nuclear deterrence?”; “Nuclear weapons cannot be ‘dis-invented’”—My observation is mentioned above.

From p. 10: Under “What are the most important uncertainties?”; “The future of arms control”—An assessment of the prospects of multilateral arms control is also needed, along with that of dyads other than the United States and the Russian Federation. Multilaterally developed norms and treaties can often impose constraints that are difficult through bilateral and plurilateral settings.

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<sup>1</sup> Usman Jadoon is a diplomat with the Ministry of Foreign Affairs of Pakistan in Islamabad, and was until recently posted in Geneva, Switzerland, working on nuclear disarmament issues. The views expressed are his own.

## COMMENT BY ALEXANDER KMENTT <sup>1</sup>

I would like to complement Dr. Ogilvie-White's excellent paper with the following comments and additional questions to the ones raised. I am focusing on the issue of beliefs and assumptions in the nuclear deterrence/disarmament debate, which I consider to be important to address in wider 'bridge-building' efforts.

### **NUCLEAR DETERRENCE/ NUCLEAR DISARMAMENT: ASSUMPTIONS, BELIEFS AND CONCLUSIONS**

1. There is a tendency on both sides of the argument to integrate facts into pre-existing constructs, assumptions, and political preferences with regard to either nuclear deterrence or disarmament. The debate of the humanitarian consequences of nuclear weapons is a case in point. For nuclear disarmers, they underscore the sense of urgency and the ethical and moral imperative for the elimination of nuclear weapons. For deterrers, the threat of humanitarian consequences is what gives nuclear deterrence its credibility and effectiveness.
2. However, no definitive proof exists for either side of the deterrence/disarmament argument. It can neither be proven that deterrence has worked in the past or will work in the future, just as much as it cannot be proven that it has not prevented large-scale conflict in the past or will not do so in the future. Moreover, a deterrence 'success' in a particular crisis scenario would not necessarily be proof that nuclear deterrence would work again the next time in different circumstances. Nuclear disarmers contend that the consequences of nuclear weapons are too grave and the risks too high and that this outweighs the alleged security gain of nuclear deterrence. This, however, also cannot be proven beyond doubt.
3. Nuclear deterrence is a belief system. It "depends on a nest of assumptions" (Borrie 2020).<sup>2</sup> Many of these assumptions are behavioural and psychological, including that the threat of nuclear weapons use will instil caution and rationality into possible crisis situations. All subjective assessments carry the inherent risk of overconfidence in one's own views, can lead to confirmation bias and a reluctance to consider alternative arguments—a risk that applies for both sides of the disarmament/deterrence divide.
4. Would a good place to start the discussion therefore not be to acknowledge exactly this lack of certainty and proof and the fact that there are no absolutes on either side of the deterrence/disarmament argument? To what extent could this be a point of convergence?

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<sup>1</sup> Alexander Kmentt is an Austrian diplomat. The views expressed are his own.

<sup>2</sup> See John Borrie, "Human Rationality and Nuclear Deterrence", in *Perspectives on Nuclear Deterrence in the 21st Century*, 2020, p. 20.


5. If the 'not knowing' is acknowledged, the discussion should logically move to what conclusions are to be drawn from this. Without absolute proof, this discussion should be about weighing assumptions against consequences and risks. The key question then becomes whether the "nuclear quiet" is preferable to a more "nervous world", as Schelling (2009) has alleged?<sup>3</sup> Or whether prudence demands as the key priority to remove the existential threat of nuclear weapons since a world without them in any case is safer given the consequences and risks associated with these weapons? How do the 'nuclear deterrence risks' compare with the 'risks of nuclear weapons elimination'? Can the following two statements be at all assessed objectively—"A world without nuclear weapons cannot be today's world without nuclear weapons" versus "A world without nuclear weapons is in any case safer as the existential threat to humanity is removed"?
6. What are the limits of knowledge about nuclear deterrence and what role do beliefs and subjective assessments play? And, how can a productive discussion be had that weighs the *belief* that nuclear weapons deter and prevent large-scale wars with the *knowledge* that deterrence, including nuclear deterrence, can fail with the risk of unacceptable humanitarian and other consequences?
7. In contrast to the *assumptions* of the deterrence/disarmament debate (e.g. whether or not it works), the humanitarian and other consequences of nuclear weapons explosions (for whatever reason) can be measured and assessed *objectively*. The risks associated with nuclear weapons can also be assessed, even though the limited availability of empirical data makes probabilistic predictions difficult.
8. Does an increased focus on *measurable* humanitarian and other consequences of, and risks associated with, nuclear weapons, therefore, have the potential for changing the nuclear deterrence assumptions and calculus and its cost-benefit analysis? If not now, what would be the changed parameters where this would be the case?
9. Moreover, nuclear deterrence is based on assumptions regarding *credible threat*, *mutual restraint* and *deterrence stability* and not that nuclear weapons will *actually* be used or, at least, that conflict will not escalate into a nuclear war, given the mutual unacceptability of the consequences of such use. If this is so, to what extent do nuclear deterrence doctrines and targeting plans go beyond a predominantly *abstract* consideration of the consequences of the use of nuclear weapons due to the assumption of ultimate non-use? How *concretely* do nuclear-armed States, therefore, integrate the humanitarian and other consequences on their own population, the presumptive opponent's population and on third countries, innocent bystanders of a possible nuclear conflict, into their nuclear weapons use scenarios?

## A FEW LAST POINTS ON RISK REDUCTION

10. There is no sufficient empirical basis to measure nuclear risk. What actually constitutes nuclear risk reduction? Is it related to possession/elimination? Use scenarios? Intent? Safety and security? Doctrine and policies?

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3 Thomas Schelling, "A World without Nuclear Weapons?", *Daedalus*, Fall 2009, pp.124-130.

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11. There is also a lot of contestation in the way that different stakeholders in the nuclear weapons discourse subjectively accept conceptions of risks related to the possession of nuclear weapons and the practice of nuclear deterrence. The deterrence/disarmament divide also defines how States look at the issue of nuclear risk.
  12. Disarmers are concerned about the risk stemming from the existence of nuclear weapons and the precarious practice of nuclear deterrence. Consequently, they urge steps aimed at reducing the likelihood of nuclear weapon explosions whether intentional or unintentional, such as from accidents due to human or technical reasons. In addition to progress on nuclear disarmament and the elimination of nuclear weapons, which is the gold standard of nuclear risk reduction, they request measures that take nuclear weapons as far away from use or accidents as possible (e.g. no-first use, de-alerting, taking weapons out of operational service, more transparency about postures and actual use scenarios, etc.).
  13. For deterrers, it appears to be somewhat different. In addition to preventing the proliferation of nuclear weapons, the main focus is on 'strategic risk reduction', i.e., countering risks that could undermine nuclear deterrence relationships. Risk reduction measures are, thus, framed more to avoid or manage crisis situations and to achieve a better understanding of policies and intentions between adversaries so as to maintain or achieve stable and less risky deterrence relationships. Risk reduction, in short, is supposed to make nuclear deterrence work better. The range of measures is, thus, more limited. Some risk reduction measures (see above) would also restrict the readiness to being able to *always* use nuclear weapons. For deterrers, they would undermine the credibility of nuclear deterrence. There is an inherent contradiction when it comes to risk reduction measures between maintaining nuclear weapons in a manner that demonstrates readiness to *always* use them, as 'required' for the credibility of nuclear deterrence (as seen by deterrers), and a more comprehensive approach to risk reduction measures aimed at ensuring that they will *never* be used inadvertently or by accident, human or technical error (as argued by disarmers).
  14. As a consequence, there does not seem to be much interest on the part of deterrers in addressing the overarching nuclear risk drivers that are the result of the collective practice of nuclear deterrence. Given the national security and defence perspective that all nuclear-armed States pursue individually, such a look at the *aggregate global nuclear risk* may even be conceptually prevented by a 'national security bias' in the consideration of nuclear deterrence and risk reduction measures.



## COMMENT BY PATRICIA LEWIS <sup>1</sup>

I have treated this as a 'reaction paper' in which I have just flung out a few thoughts in reaction to what I have read.

### ON THE USE OF THE WORD 'DETERRERS'

I would call them believers in—or proponents of—nuclear deterrence rather than deterrers. I get the idea and it is always good to come up with a new phrase that has less baggage, so I applaud the creativity. But thing is that we all want to deter—deterring aggression and deterring war or even specifically deterring nuclear war is a good thing ... so the idea that some of us are deterrers and others are not is not a correct characterization and could further polarize.

I think the differences can be summarized as:

1. There are those who think that nuclear deterrence probably works, and the resultant peace is worth the risks (this group would include those who were nuclear deterrence advocates in the Cold War and think that, although the risk calculation has changed and the number of possessors has increased, the basic premise of nuclear deterrence has not, and the risks can be minimized/handled).
2. There are those who think that nuclear deterrence probably works but the risks are too high and so we need to rely on other ways to deter (this group would include those who were nuclear deterrence advocates in the Cold War and think that the logic still applies but that the risk calculation has changed significantly).
3. There are those who think that nuclear deterrence probably does not work (or the evidence is not there to show that it does) and so the risks of nuclear weapons far outweigh any possibility of nuclear deterrence and so we need to rely on other ways to deter (this group would include those who were not proponents of nuclear weapons in the Cold War and also those who were nuclear deterrence advocates in the Cold War but think that the logic no longer applies and/or that the risks calculation has changed).

The characterizations in the paper of the positions are more detailed analytically but they are generally in line with the above characterization.

### ON THE USE OF THE WORD 'DETERRENT'

If we are engaging with the concept of deterrence in the nuclear realm, calling a weapons system a deterrent is to assume that it is. Therefore, I make a plea to say, for example, 'the Pakistan nuclear weapons system' or 'Pakistan's nuclear weapons' etc., and not to fall into the trap in which the United Kingdom has found itself by calling its nuclear weapons 'The Deterrent'. The United Kingdom can no longer have a civilized, open debate about nuclear weapons in part because of this use of English. Who would be against the 'deterrent'? And the terminology gets in the way of talking about other ways to deter because otherwise agile minds go straight to nuclear weapons when they hear the word 'deterrence'. It has served debate very badly and has increased the polarization within our communities.

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## ON ETHICS AND MORALITY

It does not help the debate to frame it ethically and morally in the way that nuclear disarmament advocates sometime do, as the framing can lead to a disrespectful holier-than-thou approach, alienation and increased polarization. I would underscore that the issue of the belief in deterrence is a central aspect of an ethical framework. Those who believe in nuclear deterrence generally also believe that theirs is a deeply held ethical and moral position. They would posit that the risks are low, and the benefits are high and, if nuclear weapons deter and thus prevent aggression and violent conflict (or even at the very least a nuclear war), then they are highly moral and ethical tools. What is interesting to note is that this was, until very recently, the deeply held view of the Roman Catholic Church, but Pope Francis' view has changed to one in which nuclear weapons themselves and the impact they have on human relations are now seen as ethically problematic. The pro-deterrence ethical framework is now being contested in other religious traditions also. We need to find a way to discuss this in which everybody is understood to be ethical and moral and where respect for each other's views remains at the heart of the discussion even though these views are being challenged. Morals and ethics are not owned solely by disarmament proponents.

**Who are the deterrers?** The answer describes a monolith I do not recognize from my own experience. In the United States, at least, the 'priesthood' died a long time ago and the acolytes scattered to the winds of counterterrorism and counterinsurgency (or retirement). Today, the practitioners of nuclear deterrence in the United States are few and far between. In the military services, nuclear deterrence has been marginalized; most graduates of the institutions of professional military education have never heard the word 'nuclear' in the classroom. Civilian engagement is also extremely limited; in universities, the only nuclear education that is possible focuses on arms control and disarmament. Think tanks long ago ran out of interest and money. In the absence of the priesthood, the key constituency of consequence for the continuing commitment of the United States and allied governments to nuclear deterrence consists of those individuals who come into civilian leadership roles and discover in their in-boxes one or a few nuclear-related decisions, for which they generally have little prior experience. The resulting decisions for deterrence are not explicable on the supposition of a pre-existing ideological orientation, an unwillingness to engage moral issues, or a closed-mindedness to the thinking of 'the other camp'.

**How do deterrers assess nuclear deterrence?** The paper conveys an overwhelming confidence in nuclear deterrence unfamiliar to me at the leadership level. In my experience, those US leaders who have to worry about the effectiveness of deterrence are more impressed by the weaknesses of conventional deterrence than by the strengths of nuclear deterrence. Their lack of confidence in the reliability of nuclear deterrence is part of what drives the desire to reduce the role and number of nuclear weapons, the search for other means of deterrence (especially missile defence), and the effort to tailor deterrence to individual States and decision makers. But they also believe that the threat of nuclear retaliation is credible when vital interests are in jeopardy. In their eyes, other capabilities can add complementary deterrence benefits, but none is a substitute for the utility of nuclear weapons in credibly threatening to put an enemy's most vital interests at immediate risk.

**Deterrence practices vary.** Yes, and in many more ways than are suggested here. Each country tailors its nuclear strategy, policy, and posture to align with national circumstances and objectives. Some of these features are static but others are in transition. A key factor that sets the US practice of nuclear deterrence apart from that of other countries is the fact that it extends deterrence to protect allies in three regions. This obligation to allies has consequences for declaratory policy and force structure.

**Key assumptions.** In my view, these come down to two. First, in the absence of fundamental changes to the international system, the risks of war, including nuclear war, would be higher in a post-nuclear world than in the current circumstance, risky though it certainly is. Second, nuclear deterrence and competition are risky, but those risks are manageable because nuclear wars cannot be won and thus must not be fought.

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<sup>1</sup> 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.

**Uncertainties and failure modes.** These discussions should be connected. Three connections deserve to be highlighted. The first uncertainty is whether political and military leaders in Moscow, Beijing, and Washington believe that 'nuclear wars cannot be won and thus must not be fought'. If one or more believes that a nuclear war can be won because it can be kept limited, then the failure mode would be major power nuclear employment that generates an unexpected response. The second uncertainty is about whether the leader in Pyongyang is a risk-averse defender of the status quo or a risk-accepting revisionist. If the latter, then the failure mode would be 'rogue State' use leading to its destruction. The third uncertainty is about whether democracies can act with sufficient resolve and constancy to maintain politically unpopular deterrence capabilities; the failure to do so could reinforce the wishful thinking of autocrats that democracies do not have the resolve to defend their interests. In this context, the failure mode could involve nuclear use by one or both sides, with the aim of breaking the other's political resolve. (The discussion of failure modes should be followed by a discussion of success modes.)

**What goals and interests of the deterrence community might be shared with the arms control and disarmament communities?** History suggests there may be many, as the nuclear-weapon States have generally pursued strategies balancing deterrence, arms control, and disarmament. Today, these shared goals and interests might include:

- reducing nuclear dangers globally, regionally, locally;
- reducing the risks of miscalculation and unwanted escalation;
- reducing the role and number of nuclear weapons;
- reducing reliance on nuclear weapons where the threat to employ them might not be credible;
- reducing the risks of regional conventional wars involving one or more nuclear-armed belligerents;
- avoiding a situation in which any State deems it necessary to use one or more nuclear weapons;
- ensuring that deterrence is effective for the problems for which it is necessary;
- ensuring strategic stability among the major powers;
- assuring weapons-capable States that their interests are better served by not crossing the nuclear threshold;
- deepening the norm against nuclear use and otherwise reinforcing the nuclear taboo;
- improving the effectiveness of collective security institutions and mechanisms in enforcing international legal obligations related to weapons of mass destruction;
- reinforcing the expectation that international nuclear order is not breaking down; and
- understanding in a global context the moral and legal context within which nuclear deterrence operates.

Dr. Ogilvie-White's paper offers an excellent and systematic analysis of the underlying assumptions, common practices, ethical components, current and future uncertainties, and potential failure modes of nuclear deterrence. It will no doubt stimulate an in-depth discussion and useful debate which can help us to think through these key concepts and their policy implications. I would like to offer some thoughts to highlight a few issues discussed in this very insightful paper:

1. It is fair to say that '[p]roponents of nuclear deterrence believe it is a strategic necessity because in their view it makes major war between the great powers unthinkable and helps keep political coercion in check'. But there appears to be growing concerns in some countries that mutual vulnerability at the nuclear level may embolden political coercion and military aggression at the conventional level. In a number of cases, such as between the Russian Federation and NATO over parts of Eastern Europe and between China and the United States over territorial disputes in the Taiwan Strait and South and East China Seas, there are concerns that forcible change of territorial status quo may be carried out without risk of serious punishment or external military intervention because of mutual nuclear deterrence. Such rising anxieties about the stability–instability paradox are likely a result of growing conventional military competition and hostility among the great powers and their regional allies. Proponents of nuclear deterrence will face increasing challenges from the possible erosion of the pre-existing interest among the great powers in maintaining stable deterrence relations at the nuclear level.


Following the deadliest border clash over the past 50 years in June 2020 between India and China—two nuclear-armed States with a stable deterrence relationship coupled with no-first-use policies—the prospects of a serious conventional conflict are becoming less unimaginable, precisely because many Chinese and Indians seem to think that nuclear weapons make a conventional war unlikely to escalate to a serious level and thus safe to fight. In a new global geostrategic environment where conventional military competition intensifies, it is necessary for countries to revisit some of the assumptions they have taken about the impact of nuclear deterrence on security.

2. It is useful to put the practice of nuclear deterrence into different categories, but it may be debatable whether the distinction of 'flexible deterrence' and 'minimum deterrence' is the best way to do so.

According to the paper, the difference between the two categories is whether a country's nuclear capabilities provide options for limited nuclear use. However, even for countries that supposedly practice minimum deterrence, such as China and India, it would not make sense for them to not have limited nuclear-use options. For instance, if such countries States were attacked by a very small number of nuclear weapons in a regional war and suffered a limited number of casualties, it is questionable whether they would launch an all-out strategic nuclear retaliation against the enemy which would probably trigger a reciprocal all-out nuclear strike. Rather, it is possible (or likely, as some may argue) that such countries would choose to launch a limited nuclear retaliation while keeping its strategic nuclear weapons to deter

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further nuclear use. In fact, such countries have indeed developed and deployed theatre-range nuclear weapons that are likely to offer limited nuclear-use options. Therefore, it may make sense to think of alternative ways to categorize the practice of nuclear deterrence.

3. Deeper and broader discussions and debates about ethics and morality of nuclear deterrence would be a useful way to push nuclear-armed States to reflect on their existing nuclear postures and to make their nuclear deterrence policies more responsible. There is deep distrust among the nuclear-weapon States about whether their enemies are taking the ethical and moral requirements of nuclear policies seriously and about whether their enemies are using ethical issues as excuses for developing nuclear warfighting capabilities (such as more accurate and lower-yield weapons). Clarification of such misunderstandings about each other's policy motives can contribute to more stable deterrence relations.

At the analytical level, further studies would be useful to find solutions to mitigate the dilemma between making nuclear deterrence postures more morally responsible and making nuclear wars more likely to happen (as a result of reduced humanitarian consequences/concerns).

4. To make the analysis on the logic of nuclear deterrence more complete, it may be useful to include a discussion on the cost of maintaining stable nuclear deterrence relations. As nuclear-armed States attach so much importance to securing their own credible second-strike capabilities, they have become extremely sensitive to any foreign development that may negatively affect their deterrence capacity. Thus they have elevated the developments of a wide range of non-nuclear technologies to the level of strategic threats because they might impact nuclear weapon systems in one way or another, such as missile defence, conventional precision-strike weapons, advanced remote sensors, cyber technologies, unmanned vehicles and vessels, artificial intelligence, etc. This has greatly contributed to the securitization of their relations in the sense that they must constantly compete in an increasingly larger number of non-nuclear military domains to protect their nuclear deterrence. The overall consequences of such broader competitions are much more serious than the nuclear competition itself and create additional serious security problems that would not have existed otherwise. China, for example, almost threw its relationship with the Republic of Korea down the drain in 2016 simply because China worried that the radar of a US missile defence system that the Republic of Korea agreed to host on its territory to counter threats from the Democratic People's Republic of Korea might somehow affect China's nuclear deterrent vis-à-vis the United States. The destabilizing spill-over effect of the perpetual maintenance of nuclear deterrence has not been thoroughly examined or fully understood by governments.



# THE LOGIC OF NUCLEAR DETERRENCE:

## Assessments, Assumptions, Uncertainties and Failure Modes

This thoughtful discussion paper by Tanya Ogilvie-White, as part of UNIDIR's Disarmament, Deterrence, and Strategic Arms Control Dialogue, highlights some of the key commonalities and differences across the many perspectives on nuclear deterrence. It also draws attention to significant knowledge gaps and uncertainties about this security paradigm. Doing so can aid the process of identifying shared interests among nuclear deterrers and disarmers and assist in the urgent task of recrafting strategic arms control.

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