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Mounting Nuclear Risks: Are We Sleepwalking into Dangerous Marshland?

By Manpreet Sethi

INTRODUCTION

The world has co-habited with nuclear weapons for over seven decades now. The number of nuclear warheads rose steadily after 1945 and peaked at 70,000 in 1986. Bitter hostility between the Superpowers and their allies during the Cold War kept the world on the edge of a nuclear precipice. Thousands of nuclear weapons remained on hair-trigger alert across theatres and the possibility of a ‘bolt out of the blue’ nuclear attack hung in the air. Nuclear risks were considered to be high.

Compared to then, the number of nuclear warheads has fallen to 14,000 today. The Cold War is long over and nuclear alert levels across triadic platforms are not what they used to be. A nuclear Pearl Harbor is no longer considered imminent.

Yet, there is a palpable sense of mounting nuclear risks. Even if the total number of warheads is fewer today, these are available with nine countries, each of whom considers the weapons as central to its national security. Each is modernizing its arsenal to ‘better’ signal deterrence. As hedging becomes the predominant strategy, a nuclear cacophony pervades the atmosphere.

Indeed, nuclear risks persist and some new ones are becoming more pronounced owing to the contemporary fusion of political, doctrinal and technological developments. This paper examines the new kinds of nuclear risks that are rising and identifies the factors that heighten them. It concludes by offering some suggestions on possible measures to arrest them.

ABOUT THE AUTHOR

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WHAT KIND OF NUCLEAR RISKS ARE GROWING?

Ever since nuclear weapons entered inter-state equations, two kinds of risks have preoccupied minds – that of their proliferation; and, their use. The risk of uncontrolled horizontal nuclear proliferation has never disappeared despite the conclusion of several treaties. In the 1960s, American intelligence estimates predicted that nearly 20 countries could acquire nuclear weapons in the next decade. To check such an eventuality, the NPT was put into place by 1970. It has since grown in membership to become nearly universal with only four outliers.

The norm of nuclear non-proliferation, however, is today under threat from a rising salience of nuclear weapons and resurgent nationalist security concerns motivating their acquisition. In north-east Asia, South Korea and Japan fear the nuclear weapons of North Korea and China. The U.S. nuclear umbrella offers them nuclear protection without their having to build own weapons. But President Trump's shadow on the alliance tends to trigger debates in these countries on developing own nuclear capability. Meanwhile, in West Asia, with the end of the JCPOA, Iran's nuclear capability and ambitions are a cause of concern yet again. In case Tehran decided to withdraw from the NPT and conduct a nuclear test, Saudi Arabia, UAE, Egypt and Turkey could feel the need to go nuclear as well.

Nuclear proliferation, therefore, continues to pose a challenge. And, if demand for nuclear weapons surfaces, supply networks could quickly emerge given that their earlier avatars have never been thoroughly investigated, nor known to have been decimated.

A second nuclear risk is that of the use of nuclear weapons. During the Cold War, a deliberate or pre-meditated use of the weapons was considered a distinct possibility and the bipolar deterrence relationship struggled to find ways of establishing strategic stability. Meanwhile, the likelihood of accidental and mistaken launches caused concern too, and several false alarms are known to have occurred.

These risks are germane to existence of nuclear weapons and have obviously not gone away. Rather, they stand magnified given the increase in number of nuclear possessors. Multiple adversarial dyads, many of which elongate into chains, now need to establish credible deterrence and each must also address risks of accidents or malfunctioning of C2.

However, the greatest nuclear risk of deterrence breakdown in recent times lies in inadvertent escalation. A miscalculation or misperception of each other's capabilities and/or intentions could make nations stumble into a nuclear war which no one wanted or intended. Many contemporary developments are increasing the chances of deterrence breakdown as a result of such nuclear use.

DEVELOPMENTS FUELLING NEW NUCLEAR RISKS

Political factors

UN Secretary-General captured the contemporary mood well when he said that inter-state relations are “characterized by division, distrust and an absence of dialogue,” with nations choosing to “pursue

strategic competition over cooperation.”¹ Indeed, adversarial nuclear nations appear trapped in responding to perceived threats with strategic modernization to establish credible deterrence. This action-reaction cycle is also taking place in a permissive environment liberated of arms control restrictions. Notwithstanding that the extant arms control had primarily involved the arsenals of U.S. and USSR/Russia, it had nevertheless presented itself as a template for others. With its collapse, there is a sense of political laxity, further buoyed by nationalist tendencies.

Another factor compounding risks is the tendency to expand the role of nuclear weapons. For instance, U.S. 2018 nuclear posture review (NPR) mentions nuclear weapons to deter “large-scale conventional threats, cyber-attacks or those against space assets.”² Russia echoes similar views. Even China, which had long purported its nuclear weapons for safeguarding against nuclear coercion and blackmail, now describes it as being “core strength of China’s strategic deterrence, the strategic support for the country’s status as a major power, and an important cornerstone safeguarding national security.”³ Meanwhile, countries like Pakistan and North Korea have long used nuclear weapons as strategic equalizers against conventional superiority as well as bargaining chips for economic aid. Given this reality, the ‘sole purpose’ of nuclear weapons for nuclear deterrence alone has suffered a setback. The perceived

increased salience of the weapon raises risk of nuclear proliferation.

A third significant political factor is the absence of a shared sense of nuclear risks. Nuclear armed states are chary of expressing concern at the speeding capability trajectories. As the offence-defense spiral continues, each believes it is actually re-establishing stability that had been upset by the other. In some cases, nations are following strategies that deliberately heighten nuclear risks, such as through deployment of dual-use systems, as a way of enhancing their deterrence. Nuclear entanglement⁴ is considered good for deterrence. But, it creates risks that can easily spin out of control.

Doctrinal factors

Re-emergence of old doctrinal concepts such as the idea of limited use of nuclear weapons to achieve political objectives is adding to the risks of nuclear inadvertence. This concept had been abandoned with the realization that a nuclear war cannot be won and must not be fought. But today, there is a growing popularity of strategies that believe that use of low-yield nuclear weapons in response to non-nuclear aggression could make for credible deterrence.⁵ U.S. and Russia are, therefore, searching for a “range of limited and graduated options, including a variety of delivery systems and explosive yields”⁶ to be able to execute ‘limited’ nuclear strikes. But, the basic question is whether a nuclear war can ever be limited.

¹ Message by UN Secretary General on occasion of International Day on Elimination of Nuclear Weapons, 26 Sept 2020. <https://www.un.org/press/en/2020/sgsm20277.doc.htm>

² Office of the Secretary of Defence, *Nuclear Posture Review*, Feb 2018. Retrieved from <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEARPOSTURE-REVIEW-FINAL-REPORT.PDF>NPR, p. 21

³ Pan Zhenqiang, “A Study of China’s No First Use Policy on Nuclear Weapons” *Journal for Peace and Nuclear Disarmament*, vol.1, no.1, p. 133. Available at <https://doi.org/10.1080/25751654.2018.1458415>; Also

see, “News Report: Xi Jinping’s Speech – Striving to Build a Powerful, Modern Rocket Force”, *Xinhua News Agency*, Sep 26, 2016.

⁴ James Acton, “Escalation Through Entanglement: How the Vulnerability of Command and Control Systems Raises the Risks of an Inadvertent Nuclear War”, *International Security*, vol.43, no.1, Summer 2018, p 67.

⁵ For arguments in favour of this strategy see Matthew Kroenig, “The Case for U.S. Tactical Nukes”, *Wall Street Journal*, Jan 24, 2018. Available at <https://www.wsj.com/articles/the-case-for-tactical-u-s-nukes-1516836395>

⁶ N.2, pp.30-31

Another worrisome doctrinal development is the blurring of lines between nuclear and conventional capabilities. Nations do not see a risk but a benefit in flaunting dual-use delivery and command and control systems. But an attack planned on hitting conventional targets that ends up destroying nuclear assets could inadvertently set into motion a set of unintended escalatory developments. Chances of misperceptions and misreading of the situation given the low trust in inter-state relations can cause a nuclear exchange that none wanted.

Technological factors

Every new technological advancement with military application, whether on the offensive side such as greater accuracy of missiles, or on the defensive side such as deployment of ballistic missile defenses impacts nuclear deterrence and affects risks. In current times, three emerging technologies have the potential to raise risks of inadvertent nuclear escalation.

The first of these is the development of hypersonic missiles, which could be boost glide vehicles or cruise missiles. Bringing together the attributes of high speed and 3-D maneuverability, they are difficult to intercept and the BMD is obviously making them popular. However, they bring two kinds of ambiguities – of warhead and destination. In both cases, when an adversary's early warning detects incoming missiles, but it cannot be sure whether they are conventional or nuclear armed, nor ascertain their target, the tendency would be to assume the worst. This fear would be even greater for a country with a small arsenal facing an adversary protected with a BMD. Fearing loss of own retaliatory capability, the tendency could be to shift to launch on warning or launch under attack postures to enhance own deterrence. But such shifts would raise risks of inadvertent use in

moments of crisis due to misperception and miscalculation.

The second technological development that could exacerbate nuclear risks comes from the possibility of cyber disruptions to nuclear command, control and communications (NC3). Given the high dependence of nations on sensors for data assimilation and dissemination, the fear of their being attacked could invoke panic during a crisis and tempt pre-emption. It could also compel nations to adopt risky nuclear postures, ostensibly to enhance deterrence, but thereby raise risk of inadvertent escalation.

A third risk would be generated by the increased incorporation of artificial intelligence (AI) into nuclear systems. While nations are sensitive to tight retention of nuclear decision making in human hands, use of AI in robotics, autonomous vehicles, C2, etc. could lead to greater reliance on machines especially if nations see this as enhancing deterrence by bringing an automaticity into retaliation. But, their real functioning in crisis and impact on escalation management has not yet been fathomed.

WHAT CAN BE DONE TO ARREST MOUNTING NUCLEAR RISKS?

The best solution to arrest nuclear risks would, of course, be to get rid of such weapons. Their very presence generates insecurity and creates motivations for proliferation and chances of their use. So, achieving a nuclear weapons free world (NFWF) should be the logical answer. But unfortunately, interest in nuclear disarmament is low today despite the adoption of the Treaty on the Prohibition of nuclear weapons in June 2017. This appears to be on the verge of entering into force with requisite ratifications. Yet, when that happens, it will not bring about

an NFWF because none of the nine nuclear possessors has joined the treaty. Rather, there is greater friction between the nuclear and non-nuclear states and the possibility of NFWF looks bleak.

The next best step, then, would be to minimize nuclear risks. But, this is possible only when nations first admit that they exist. Currently, several nuclear nations have strategies that believe in creating risks for enhancing nuclear deterrence. So, a necessary first step is a dialogue between them on doctrines, force postures and structures. This can help to address misperceptions, foster habits of engagement, and help create a shared understanding of risks.

Conduct of dialogue on these sensitive issues is, however, made difficult by the lack of trust between nations. Nevertheless, two ways can be suggested to encourage engagement on nuclear risks. The first could be a top down approach, much like the case of the nuclear security summits, when a prominent leader brought together others on a common platform to understand the risk of nuclear terrorism and address it through individual and collective efforts at improving nuclear security. A similar call by an influential leader for a nuclear risk reduction summit could enable a meeting where leaders could be made to dwell on nuclear risks.

Another approach could be bottom up by bringing nuclear risks into public imagination through use of creative media. Movies, music concerts, art exhibitions, social media, virtual reality presentation, etc., could be used to recall the horrors of atomic bombing fading from human memory. Empirical studies prove that any use of nuclear weapons would have severe global consequences. Of course, the severity would depend on the number and yield of weapons used. But, the use of even a fraction of the modest-size arsenals held by two adversaries would have repercussions beyond the immediate region of nuclear exchange for food and water availability, agricultural output, climate change, migration, etc.

Therefore, for the sake of international security and global stability, it is urgent and imperative that measures are taken to reduce risks of nuclear use. The possibilities of such use owing to misperceptions and inadvertence are particularly high in today's polarized political environment. Worst case assumptions of each other have led to doctrinal changes that lower the nuclear threshold, ably enabled by emerging technologies.

Nations must not sleepwalk into the marshland of an offence-defense spiral and mounting nuclear risks. There is need for a collective understanding that the cost of nuclear use in terms of human lives, socioeconomic upheaval, and environmental destruction is unaffordable.

The Asia-Pacific Leadership Network for Nuclear Non-Proliferation and Disarmament (APLN) is an advocacy group that aims to inform and energize public opinion, especially high-level policymakers, to take seriously the very real threat posed by nuclear weapons, and to do everything possible to achieve a world in which they are contained, diminished and eventually eliminated.