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DEVELOPING A FRAMEWORK FOR EVALUATING NUCLEAR RISKS IN SOUTH ASIA

Jingdong Yuan[1]

A new framework is essential for evaluating nuclear risks in South Asia. This region is marked by perennial disputes, emerging rivalries and long-standing extra-regional interferences, suggesting that it must be considered as a complex geostrategic frame of reference, rather than as a mere geographic construct. As key variables, postures such as no first use and escalate to de-escalate, as well as technological advances may either mitigate or exacerbate nuclear risks. Due to this complexity, causes of instability, risks of conflict, escalation to nuclear use and prospects of restraints and risk reduction will need to engage key players. This must occur not simply in dyadic, but also in multilateral contexts, due to the cascading effects of interactions among them. Within this framework, this essay will explore the erosion of no first use, the potential pitfalls of escalate to de-escalate and technological advances pose significant and worrying challenges for nuclear risk reduction.

Key Words: no first use, nuclear risks, South Asia, technologies, nuclear escalation, nuclear doctrine

Introduction

When discussing nuclear challenges, South Asia is no longer just a geographic construct and has broadened to become a geopolitical frame of reference. Most critically, causes of instability, risks of conflicts and escalation to nuclear use, as well as prospects of restraints and risk reduction will need to engage the key players, not simply in dyadic, but also in multilateral contexts.

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Ever since, or even prior to, the 1998 nuclear tests whereby both India and Pakistan became de factor nuclear weapons states, the United States, China and, to a lesser extent, Russia, have been a part of the evolving nuclear landscape in South Asia.[1] One of this nuclear landscape's unique characteristics has been the cascading effect, by which actions by one actor can trigger reactions from a second actor that in turn affect a third actor.[2]

While primarily a direct response to perceived and real US threats to its national interests, Chinese nuclear and non-nuclear military developments affect India's calculations. This is due to the fact that it has to take into account both China and Pakistan in its strategic planning. As India seeks to maintain credible minimum deterrence vis-à-vis China, it accrues nuclear capabilities that in turn threaten Pakistan's nuclear deterrent, prompting the latter to expand both the quantity and quality of its nuclear arsenal. The strategic chain has yet to be broken.[3]

Nuclear risks in South Asia are affected by nuclear posture, technological developments and geopolitical considerations. The last factor reflects decisionmakers' threat perceptions and assessments, decisions on resource allocation for defence and willingness to engage in either diplomacy, or the threat or use of force—including nuclear use—in inter-state relations.[4] Nuclear posture and technologies affect how military force is deployed and used, under what specific circumstances and the extent to which it can be executed to achieve set objectives.

In the South Asian context, unresolved territorial disputes, asymmetric capabilities, changing security alignments and emerging strategic rivalries define inter-state relations present a complex geostrategic lens through which to understand and analyse nuclear challenges. This essay will provide a brief overview of some of the key variables impacting nuclear deterrence and strategic stability in South Asia, namely no first use (NFU), escalate to de-escalate and technological advances.

No First Use

China and India have both adopted a nuclear NFU posture. However, while China's NFU position has been reiterated numerous times in official documents, India's reference to NFU has been ambivalent and remains in draft form.[5] Both have committed to not use nuclear weapons first against non-nuclear weapons states (NNWS). Both have conducted limited nuclear tests and maintained relatively small nuclear arsenals. For their respective nuclear doctrine, India and China adopted credible minimum deterrence, with the latter increasingly striving for assured retaliation.[6] Within this context, both countries leadership and official documents have reiterated their NFU pledge.[7] However, whereas China's NFU appears unconditional—at least in its official stipulation—and extends also to NNWS in nuclear weapons free zones (NWFZs), In-

dia's NFU pledge applies only to those NNWS that are not allied with nuclear weapons powers. Further, India retains the option of nuclear use in response to chemical and biological attacks.[8]

In recent years there have been discussions and debates within China and India on NFU. These have taken place as a result of both the changing geostrategic environment and technological developments. In China, however, such discussions remain confined to a small circle of academics that includes only a few People's Liberation Army (PLA) analysts.[9] While the NFU pledge was not mentioned in China's 2013 defence white paper, it has since been reaffirmed in the subsequent papers.[10] Chinese officials and political leaders have continued to reiterate that there is no change to its NFU posture. By contrast, discussions in India have been more public and wide-ranging, including remarks made by high-ranking officials that raise serious doubts about India's continued commitment.[11]

Thus, even though China's and India's official NFU postures appear to have remained unchanged, their nuclear modernisation programs in recent years point to growing ambiguity in their nuclear strategies in three key areas. First, China's and India's postures on de-mating of nuclear warheads and delivery vehicles may be undergoing modification to enhance readiness of nuclear use.[12] Second, there has been a reported move towards launch-on-warning (LOW) in China's Strategic Rocket Force.[13] Third, both countries are developing nuclear capabilities aimed at shifting from credible minimum deterrence to credible limited deterrence with an expanded number of strategic missiles, a wide range of launching modes—air-, land-, and sea-launched ballistic and cruise missiles, greater mobility and survivability, better command, control, communication and intelligence systems for early warning, as well as development and deployment of missile defence systems.[14]

These developments to some extent have been responses to increasing external and internal challenges to their NFU postures. These include: (a) How to determine and respond to incoming strikes due to growing conventional-nuclear entanglement. This has become an important issue between the United States and China, with the latter concerned with the survivability of its relatively small nuclear arsenal, potentially explaining its intention to expand its current nuclear forces.[15] (b) The impact of missile defences on their second-strike capabilities and hence deterrence credibility, as well as on overall strategic stability in South Asia.[16] (c) Space, artificial intelligence and cyber factors affecting and related to early warning and command and control systems, as well as the proper controls over the use of nuclear weapons.[17] (d) Increased pressure and compressed time during crises for decision-making that could create a 'use or lose' dilemma. This is also drawing greater attention to the China-India nuclear relationship given their long-standing border disputes and in the aftermath of their 2020 clash in the Galwan Valley.[18]

Escalate to De-escalate

The much-debated posture of escalate to de-escalate is often attributed to Russia, even though it has never been explicitly articulated or written into official Russian doctrine or statements.[19] While often tied to Russia, this concept also has potential applications in the postures of Pakistan and the United States. In essence, escalate to de-escalate effectively and perhaps more accurately refers to escalation control, which may be defined as the ability to determine the next level of violence and discourage the other side from raising it further.[20] In other words, by raising the stakes, it is hoped the other side will back down given its cost-benefit calculations.

This escalate-to-de-escalate posture smacks of a doctrinal precedent during the early Cold War years, namely the threat to use massive nuclear retaliation in response to any land invasion of Western Europe enabled by the Eastern Bloc's conventional superiority.[21] Since that time, the situation has reversed with Russia more concerned with its conventional inferiority resulting in its nuclear arsenal undertaking a greater role in its military doctrine.[22] Yet, there are significant difficulties in anticipating the impact of escalate to de-escalate in South Asia, due to different perceptions of stakes and values involved in the event that such a strategy is deployed. One fallacy could be 'mirror imaging' in which the initiating actor thinks the other side is likely to back down because the stakes are not high enough to justify the costs associated with the next level of conflict.[23]

Some have argued that escalate to de-escalate is simply intended to reverse a situation in which one side is losing and the limited use of nuclear weapons to 'escalate' the conflict may re-establish deterrence and terminate war.[24] For example, Russia could respond to conventional strikes on such high-value assets as its nuclear command, control, communication and intelligence (NC3I) with 'strategic, rather than nuclear, retaliation', which could initially involve conventional strike systems such as Avangaard, a Russian hypersonic glide vehicle, or other high-precision and prompt hypersonic glide platforms. This has become possible as Russia develops and deploys long-range, precision-guided weapons systems.[25]

The Russian case correlates to a degree with the US version of escalate to de-escalate in that conventional strike capabilities would be a factor. However, in the US case, these strikes would likely be used pre-emptively or preventively to decapitate an adversary's military operational systems, while in the Russian case they would likely be retaliatory.[26] As applied in the Western Pacific, this US approach could be said to apply in its air-sea battle concept that is meant to respond to and to neutralise China's alleged anti-access/area-denial (A2/AD) posture.[27] Thus, escalate to de-escalate in the US case is as much about damage limitation and escalation control, as it is about the credibility of its alliance commitments under extended deterrence.

As applied in the example of Pakistan, escalate to de-escalate could be said to factor into its posture of full spectrum deterrence with the introduction of short-range, nuclear-capable missiles and enhanced conventional deterrence capabilities.[28] In the South Asian context, Pakistan's asymmetrical escalation posture, including nuclear first use, to compensate for its conventional and nuclear inferiority vis-à-vis India is premised on assuming that the latter would refrain from further escalation for fear it may lead to nuclear exchanges at the strategic level, especially the stakes are not high enough to justify all-out military responses to Pakistani provocations.[29] In comparison, Russia's resort to the escalate to de-escalate posture is to both demonstrate resolve and to achieve limited objectives before further escalation of the conflict, whereas the US doctrine is more about escalation dominance.[30]

Technological Advances

Technological advances traditionally have been driven by, and in turn have pushed, both demands of nuclear posture and nuclear arms control. At the same time, they have also raised significant challenges in the areas of command and control, as advanced technologies are incorporated into nuclear and conventional weapons systems.[31] For example, the introduction of multiple independently targetable re-entry vehicles (MIRVs) during the Cold War exacerbated the temptation for an adversary to initiate first strikes against silo-based MIRVed missiles, which would thereby decapitate more nuclear warheads. Deployment of MIRVed systems concurrently led to an intensified arms race, resulting in both reduced strategic stability—understood as crisis stability and arms race stability—between the two superpowers.[32] In light of these conditions, the United States and the Union of Soviet Socialist Republics (USSR) placed a ceiling on the numbers of MIRVed systems in their nuclear arsenals.[33]

As applied to submarine-launched ballistic missiles (SLBMs) and submarine-launched cruise missiles (SLCMs), when combined with NFU, these delivery vehicles can be stabilising given their ability to enhance survivability and deterrence. Both SLBMs and SLCMs are deployed on sea-based platforms that are more effective at evading detection and SLCMs typically carry non-strategic nuclear warheads. On the other hand, these sea-based systems can also be destabilising. This is due, in part, to the potential for shifts in nuclear posture that elicit deployments of low-yield nuclear-armed SLCMs, as well as the challenges to command and control of sea-based nuclear systems in a communications-denied environment.[34]

As the strategic environment and technological advances have evolved, they have ushered significant challenges to strategic stability. Great-power competition, loss of strategic trust, challenges to arms control, coupled with the uncertain ramifications of emerging technologies, heighten the risks of nuclear use between nuclear-armed and nuclear-allied states. Among these, the introduction of emerging technologies has raised

serious questions about their impacts on nuclear weapons and nuclear use.[35] A range of both old and new systems, including missile defences, hypersonic and high-precision weapons, anti-satellite weapons, artificial intelligence and machine learning, and quantum computing can pose significant threats to strategic stability.[36] As frameworks are devised to evaluate nuclear risks in South Asia, these strategic or disruptive technologies must be addressed, particularly for their impact on regions of already close geographic proximity as in South Asia.

Conclusion

To better evaluate nuclear risks in South Asia, it is necessary to move beyond traditional frameworks to establish a new one. To better connect nuclear posture to practice, this new framework must be responsive to such potential shifts as escalate to de-escalate and technological advances. While addressing these changes, it will be crucial for India and Pakistan to re-establish a degree of predictability. This can be achieved through reaffirming their bilateral commitments to not attack each other's nuclear facilities and in further development of confidence building measures. Among these, nuclear de-alerting and de-mating would extend the time needed for decisionmakers, thereby mitigating the 'use or lose' pressure.[37]

Beyond India and Pakistan, other key players must also be factored. For decades, the discussion has been confined to India and Pakistan, with the inclusion of countries like the United States as occasional mediators. With the evolving geopolitics of South Asia, innovative approaches require additional involvement, including engagement of China as one of the key interlocutors. Given the cascading effects of the strategic chain, such that Chinese nuclear modernisation programs respond to US conventional and nuclear developments, which in turn impact India's nuclear posture and modernisation, thereby affecting Pakistan's nuclear planning, clearly all of these countries must be involved.

From the perspective of nuclear posture, NFU could point to one potential avenue for this new framework to develop, provided India clarifies its position on its nuclear doctrine. For China and India, moving beyond their NFU rhetoric towards establishment of a nuclear strategic dialogue and a de-targeting agreement could limit if not completely remove nuclear use in their conflicts.[38] However, this would mean that Beijing accepts India as a nuclear weapons state in an official manner, which it remains reluctant to do.

Nevertheless, South Asia's strategic landscape is changing. It is refocused on the prospect of nuclear restraint and the risks of nuclear escalation, amidst growing tensions between India and Pakistan on the one hand, and China and India on the other. At the same time, extra-regional strategic developments, most prominently the emerging US-China strategic rivalry, also affect the nuclear dynamics on the sub-continent. Together, they are eroding the doctrinal foundation of the NFU posture in both China and India.

In the case of China, this is due to the growing non-nuclear capabilities and threats to its limited nuclear arsenal, while in the case of India, this is due to ambiguity and confusing interpretations by high-ranking officials. Clearly, NFU cannot be sustained without broader endorsement by all nuclear weapons states and arms control agreement on strategic but non-nuclear capabilities.

Ultimately, escalation risks in nuclear use exist because of the possibility of unauthorised use and may be encouraged by a false sense of confidence in the ability of escalation control and framed in a strategic myopia that could bring the region to the nuclear precipice. To avoid this outcome, closer examination of and exchanges on such postures as NFU and escalate to de-escalate, in combination with greater exchanges on technological trends are essential to establishing a new framework for evaluating nuclear risks in South Asia.

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