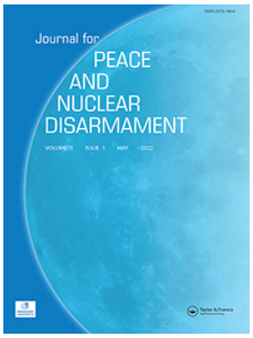

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The China–India–Pakistan Nuclear Trilemma and Accidental War

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ABSTRACT

The perspective of the paper is the geopolitical contestation between China–India–Pakistan, which frames the contours of the nuclear trilemma that is nested in the broader global nuclear weapons framework. Territorial disputes harbor the potential for conflict under the nuclear overhang between China–India and India–Pakistan. The two dyads are structurally separate but are also connected. Beliefs systems that shape nuclear doctrine have commonality in the China–India dyad. But such is not the case in the India-Pakistan dyad. There is, however, political recognition of the dangers that inhabit the unexplored space of conventional war under the nuclear over hang. The greater danger of nuclear war in both dyads is concealed in the inability to control escalation of conflicts that may have small beginnings but can potentially spin out of control. The paper uses Clausewitz escalation model to highlight this crucial issue. The policy prescriptions are therefore directed on never testing the boundaries of the nuclear threshold and relate to reduction of alert levels. A Global No First Use Treaty is proposed and one that is possible only if the dangers of nuclear war are publicized at the global level thus forcing the hand of political leaders. This is an imperative step to free the leadership from the shackles of varied impractical nuclear strategies that are unable to answer the question – what happens after the first nuclear weapon is fired.

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Introduction

The subject of this paper is nuclear weapons in the context of global geopolitics. The aim is to offer policy recommendations for various stakeholders. The issue concerns humankind as the costs of nuclear war are such. The existing risks emanate from the fact that actual use of nuclear weapons and its aftermath have colossal risks that include threat to human existence itself. Decreasing the risk of actual use of nuclear weapons is the particular quest. The immediate and pressing danger is accidental nuclear war. To understand the danger, one has to dissect the threat framework and the nature of the beast.

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Threat Framework: Nuclear Weapons and Climate Change

The Threats

Nuclear weapons and climate change are the two key vectors that pose existential threats to humanity. These threats can even manifest in combination. By the early 1980s, there was international scientific recognition of human and environmental consequences of nuclear war (Turco 1983). Technological disruption as a supplementary vector and one that is layered over both has been driving and amplifying the two threats. However, the norm in the practice of international relations has been to deal with these threats in parts and not as a whole.

The 2007 UN Development Programme (UNDP) Human Development Report warned that failure to act cooperatively on climate change would "represent not just a failure of political imagination and leadership, but a moral failure on a scale unparalleled in history" (Watkin 2007). A similar sentiment can apply to nuclear weapons. Though the link between the two has been scientifically established, the evidence has been ignored, as it is an inconvenient truth that upends several of the basic assumptions on which nuclear strategy is built.

World Order

An interregnum of relative peace amongst major and middle level powers followed the demise of the Soviet Union in 1991. However, after 2001 attack on the Twin Towers, war clouds on the global horizon have steadily darkened. Over the last two decades, states have been preparing for conflict in the name of deterring potential adversaries. This is also the period when the impact of China's economic and military rise was being felt on the global stage. Also, Russia relations with NATO countries have deteriorated since the occupation of Crimea in 2014 and strategic situation destablized by the Russian invasion of Ukraine in February 2022.

The contemporary world has been described as being "Between Orders" (Aiyar et. al. 2021), a system characterised by structural confrontation between the United States and China and United States and Russia. The United States has explicitly identified China as its key competitor and challenger to its primacy. In the absence of a recognizable global order, clouded by nuclear weapons and climate change, the contention and cooperation between the two greatest powers, though limited, will be one of the most significant drivers of international relations.

Yet this will not be a bipolar world – either in an antagonistic Cold War sense or in terms of a G-2 condominium. Even if China and the United States were to be in agreement, they cannot solve issues such as North Korea's nuclear weapons or China's own maritime claims without engaging other regional and rising powers. Furthermore, while the United States and China are economically dependent on each other, they are also strategic rivals and competitors. The balance between cooperation and contention in Sino-US relations is likely to keep shifting, not just with changes in their leaderships but with changes in their relative power (Aiyar 2021).

Going forward, in the 2020s, the contestation is likely to deepen and with it the probability of nuclear weapon use, seems to be gaining ground. The remaining nuclear powers – Russia, UK, France, India, Pakistan, Israel, North Korea – are increasingly drawn into the ambit of the larger global struggle.

Changing Methodologies & Tools of Statecraft

The nuclear shadow not only looms large but is also subject to constant change driven by technology, which in turn poses new challenges. At an analytical level, the foremost challenge is the changes in the methods being adopted for conduct of politics (Susskind 2018). The purpose of politics, especially international politics, remains constant – to gain influence for self-interests. The means of achieving this are changing and when accompanied by an increase in the rate of change, it poses a challenge to political leadership to understand the character of change and the role of technology, as its driver.

The currency of political power in statecraft has always depended on applying various instruments like diplomacy, economic power and military force to achieve political goals. Intelligence, technology and communications inter alia are the enablers that sharpen these primary instruments. "Political power remains a psychological relationship between those who exercise it and those over whom it is exercised" (Więcławski 2012). International politics is also practiced using the twin arts of persuasion and coercion. All application of the instruments of statecraft can only be fruitful if they psychologically influence targets to shape their decision-making and are followed by actions that can contribute to favourable outcomes for the executing entity. Persuasion or coercion are both mind games. It is finally the mind of the decision makers that is the target and the battleground. While persuasion works mostly by conviction, coercion attempts to attrit the will of the adversary.

In terms of process, at the individual and collective level, information through sensory perception intermingles with memory and knowledge which in turn, shapes decision-making and drive further actions. The transformation in strategic affairs is that information embedded as narratives can be targeted to influence national and international decision-making mechanisms.

Targets may not even be aware of the manipulation. Like money laundering hides its originators, narrative laundering can hide the original story tellers. The process may also be covert and deniable. Internet communications have collapsed distance and time. There is also no limit to sustained execution connected to feedback loops that can use the power of algorithms to better its performance through machine learning, quantum computing and artificial intelligence. However, beliefs are dynamic and can be changed by counter-narratives and intervention by targeted governments. Therefore, the power of information, like all technological products, can be contested and the impact of information diluted or reversed.

At the level of contestation, moves and counter-moves to achieve offensive and defensive cyber capability have become a major component in the conduct of statecraft. The struggle for narrative domination is a permanent state of affairs. Cyber and space have joined the land, maritime and aerial geographies as major domains where contestation is enacted. The cyberspace and outer space provide the sinews that interconnect the contemporary world. While there are some international rules for the land, maritime and air domains, and space geographies, the cyber domain is ungoverned. No international agreements have been possible to arrive at a common rules of the road system for cyber space and considering the trajectory of geopolitical contestation, it seems that its anarchic stature will endure.

The character of political intercourse within nations has also been impacted by the information age. Apart from transformations in forms of communications through a multiplicity of interconnected electronic mediums for narrative dominance, protecting critical civilian and military infrastructure from cyber-attacks is a major area of concern.

At the global level, the impact is varied and uneven. Developed societies remain the harbingers of technological change even as developing societies face a plethora of fundamental problems like poverty alleviation, illiteracy and poor health. Both developing and developed societies are easy prey for those who control the digital networks that can influence the belief systems of individuals and political communities. The controllers of digital networks need not be the corporations that own them. While Apple, Meta, Alphabet or Tencent may be the creators of these networks, ultimate control could vest in the political leaderships of the United States or China with varied degrees of control. Internally, governments are empowered by their ability to intrude into private activities and communications, and to thus keep a close watch on the populace. This ability has strengthened authoritarianism.

Rise of Authoritarianism

Nationalism is gaining strength on the international stage. Xi Jinping's growing authoritarian impulses and former US President Donald Trump's "America First" rhetoric are illustrative of this phenomenon. Nationhood is rooted in the security concerns of individuals organised as a collective and the ability of the nation to call for sacrifice in the cause of the collective good. This also allows for the allocation of scarce national resources for security purposes over human development. Furthermore, nationalism aids the rise of leaders who emphasize security concerns. The threat image is invoked to produce unity which is then directed against the other. Growing global geopolitical tensions in the last two decades have been accompanied by a rise in the number of popular leaders, who present themselves as strongmen capable of promoting national interests. Xi Jing Ping, Putin, Trump, Erdogan, Modi and Bolsanaro are the archetypes.

Arms Race

Loss of trust and the consequent lack of mutual cooperation due to deterioration in political relations has resulted in a global conventional and nuclear arms race. Simultaneously, politico-military proximity in civil–military relations has resulted in the political leadership being amenable to capture by proclivities derived from military thinking to perceived vulnerabilities in national security. Most vulnerabilities are, in essence, creations of technological products that drive the action-reaction sequences. The arms race then develops its own logic and is also unbridled by any international cooperative political rationale.

The turning point in the unbridled arms race during the Cold War was the acceptance in 1986 by the political leadership of the United States and Soviet Union that "a nuclear war cannot be won and must never be fought" (Dunn and Potter 2020). Recently, in June 2021, this sentiment was reiterated by Presidents Joe Biden and Vladimir Putin during their meeting in Geneva (Deutsche Welle 2021). However, if the ongoing

qualitative and quantitative nature of the nuclear arms race is any indication, there is major gap between the spoken word and the done deed.

Utility of Force

The role of force under the nuclear shadow has remained a grey area and is largely untamed by political risk-taking ability backed by doctrinal and operational virtuosity. The application of force in terms of conventional military power between nuclear armed states is stymied by the presence of nuclear weapons. The stability-instability paradox (Kapur 2017) keeps an uneasy peace by avoidance of direct and major military confrontations and conflicts. Instead, states exist in perpetual political and military confrontation that sometimes escalates into crises.

Inimical acts now largely utilize cyber and space power to exploit vulnerabilities in critical infrastructure systems required for security and wellbeing. Energy, transportation and financial subsystems inter alia are the natural targets. However, mutual vulnerability has also acted as a brake, preventing confrontations from spilling into open conflict. The overall geopolitical ambience is one where boundaries are blurred, whether between military and civil affairs or between war and peace.

Cyber and space power are now layered over subconventional, conventional and nuclear forces. Reaction through conventional military power to cyber-attacks is an option. The major danger is that use of subconventional or conventional military power can escalate rapidly into the nuclear realm where the nature of the beast can defy taming by political rationale.

Nuclear Factor – Nature of the Beast

Nuclear weapons have bestowed an unenviable task on political and military leaderships. The struggle is between attempts to achieve political objectives without actual nuclear use and balancing the potential risks and costs involved, if they are indeed used. The destructive potential of nuclear weapons has a direct psychological effect on the decision-making systems of an adversary and also the perpetrator.

Fortunately, the historical record of nuclear crises reveals that, apart from political rhetoric in action, the leadership of nuclear powers have preferred to exercise caution. Confrontations that have brought nuclear weapons on a higher state of alert have not been uncommon.

Strategic Stability and the Demise of Mutual Vulnerability

Historically, the struggle to harness the power of nuclear weapons has succeeded to the extent of being able to deter other nuclear powers. This remains its core deterrence role. After two nearly two decades of build-up in nuclear arsenals during the Cold War, there was political acceptance that maintaining mutual vulnerability and strengthening survivability was the lynchpin of defence and strategic stability. It called for deterring aggression through the promise of retaliation and denial.

Beyond this fundamental defensive role, only untested theories like flexible response and escalate to deescalate continue to exist that rely on manipulation of risks for

coercion. Development of nuclear wherewithal was shaped in the main by seeking the preservation of mutual vulnerability. The driver was the projection of an image of possessing the capacity for retaliation even if one is struck first. The image required for its sustenance, was the creation of invulnerable command and control systems and nuclear weapons. The operational preference was for a combination of deeply buried, nuclear-hardened underground facilities, aircraft on high alert, and submarine-based nuclear weapons.

The original blow to the concept of mutual vulnerability was struck by President Reagan in March 1983, when he announced the Strategic Defense Initiative (SDI) that was expected to also sustain the Anti-Ballistic Missile (ABM) Treaty signed in 1972 between the United States and Soviet Union. He ascribed the initiative to seek defensive capabilities to the unchecked growth of Soviet Union's nuclear and conventional offensive capabilities. The purpose of the SDI was to defend the United States from attack from Soviet ICBMs by intercepting the missiles at various phases of their flight. In 2002, US President George W. Bush withdrew from the ABM Treaty, citing terrorist threats (Boese 2002).

Even after nearly four decades, several nuclear powers continue to unsuccessfully chase the chimera of missile defence. Recent reports of China testing hypersonic glide vehicles is indicative (Menon 2021). The reality is that the development of the offensive capability to penetrate ballistic missile defences has continued to outpace their capability to defend. At best one could achieve some degree of success to defend a couple of cities or sites. Such a provision was available in the ABM Treaty that allowed for two sites per country. Both the United States and the USSR had opted for their capitals and one missile site.

The development of systems by like the US Prompt Global Strike Mission (PGS) (Congressional Research Service 2021), and Russian and Chinese hypersonic glide vehicles that can carry conventional or nuclear warheads that are difficult to intercept are ongoing. These developments raise questions of strategic instability apart from adding complication to future arms control talks. The historical record tells us that technological prowess often fails to deliver as technology is contestable and counter developments neutralize initial advantages. Nuclear weapons too are subject to this phenomenon. Doctrinal innovation that can provide sufficient degree of assurance of strategic success remains elusive.

Despite much intellectual effort, the search for exploring nuclear vulnerability and ensuring survivability continues to be haunted by fear of self-destruction. On the whole, nuclear strategy continues to chase its tail and the condition endures as a dilemma, in the political imagination of nuclear powers. The central dilemma is one that belongs to strategy – what happens after the first nuclear weapon is fired against another nuclear weapon power?

At the conceptual level, the quest for strategic stability and its realization can best be brought about if mutual vulnerability is accepted. The acceptance must be driven by recognition that given the quantity of nuclear weapons and platforms in the possession of nuclear armed nations, a successful first strike would require a large quantity of nuclear explosions that in turn will bring about climatic effects at the global level-like nuclear winter and pose an existential threat to humanity. Scientific studies indicate that even a limited nuclear exchange between India and Pakistan would result in world-wide climate disruption (Helfand 2022).

World Order Transition and Technology

The contemporary technological quest for using cyber and space power to neutralize nuclear weapons of the adversary may seem attractive. A recent novel co-authored by Admiral James Stavridis and Elliot Ackerman is a cautionary tale of ignoring the truism that in strategic affairs, technology is contestable (Stavridis and Ackerman 2021). Technological advantages between competitors are mostly ephemeral and reliance on it is untested. The potential impact of failure when dealing with the possibility of nuclear use far exceeds any political stakes that can call for undertaking such a venture. The saving grace is that there is widespread acknowledgement that nuclear war cannot be won and therefore deliberate initiation is unlikely. On the other hand, the greater likelihood of nuclear initiation is one that could be accidental or through miscalculation (?).

The combination of national leaders seeking to preserve their strongman images through displays of risk taking and the notion that nuclear weapons can have military utility can be a deadly cocktail that triggers accidental nuclear use. Miscalculation, misjudgment and misperception are often cited as major factors for accidents. All these require a decision to take effect. But what does not get enough attention is that accidental use can happen because of the proclivities of military systems to fall victim to Clausewitzian friction and fog of war (Pietrucha 2016) that are nearly insurmountable when military systems engage each other.

Yet, nuclear powers are increasingly being drawn into a race which everybody knows they cannot win (Dunn and Potter 2020). The extent of ravages of the ongoing COVID-19 is perhaps unknown, but what is known is that it has been catastrophic for a large part of the global population. Yet the technological dimension of the nuclear race reflected in the burgeoning defence budgets of major and middle powers is consuming more and more scarce resources. Burgeoning defence expenditures seems unmindful of starvation, illiteracy and poor health. There is failure of leadership at international and national levels.

Only an international dialogue can attempt to arrest the present madness of exploiting vulnerability in the name of strengthening deterrence. But when the world is "Between Orders", there is little scope for political leaderships to engage in dialogue. The danger is that when matters are left unattended, the return to a dialogue will follow only after a crisis is survived or nuclear use has transpired. The decade of the 2020s is therefore pregnant with such possibilities.

The China–India–Pakistan Trilemma

Exogenous and Endogenous Forces

The drivers of the China–India–Pakistan nuclear trilemma are sourced from the interaction between forces that are exogenous and endogenous with respect to each country. The exogenous forces emerge from the global and regional contexts. The varied exogenous vectors produce the constellation of forces that then interacts with the endogenous forces that emanate from within each country. The endogenous forces of each are normally discernible as stakeholders. Political, scientific, military, economic and strategic communities are the primary stakeholders that shape the doctrinal and operational aspects of the nuclear wherewithal. The proximity and state of relationship between

stakeholders plays an important role in decision-making. The role of the stakeholders varies with each country and the particular issue in contention.

Threat Imagination

The subjective imagination of nuclear threats are sourced from the external environment and processed by the strategic community. It is then arbitrated by interaction between the other stakeholders. The process of arbitration follows an intellectual pathway that is influenced by the relationship dynamics between them. In particular, the proximity between the political, scientific and military stakeholders play a major role in shaping the doctrine for development, deployment and employment of nuclear forces.

The influence of stakeholders varies within each country. The Chinese decision to go nuclear in 1964, was primarily a political one and driven by being subjected to US nuclear blackmail during the crisis in Taiwan and the Korean war (Menon 2018, 28–30). For India, it was ultimately brought about after more than three decades of domestic debate between political, scientific, economic and strategic communities. The journalistic narration by Raj Chengappa in his book *Weapons of Peace* captures the role of varied stakeholders in the decision that culminated in India's nuclear explosions in 1974 and 1998 (Chengappa 2001). The earlier stages witnessed the overwhelming influence of the scientific community that faced headwinds from politicians and economists. Political tensions with China following the 1962 war, China's nuclear tests in 1964 and intelligence reports of Sino-Pakistan nexus in developing Pakistan's bomb, played major roles in India's decision to develop nuclear capabilities. Military influence was marginal and picked up strength less than a decade prior to the nuclear explosions conducted in 1998. For Pakistan, the decision was politically seeded by Zulfikar Ali Bhutto soon after that country's defeat in the 1971 war (Menon 2018, 48–49). Nixon's decision to open up to China was driven by the Sino-Soviet split. Pakistan's role in facilitating Sino-US rapprochement seeded the Sino-Pakistan nexus for the development of its bomb. Pakistan's political decision to develop the bomb generated enthusiasm in its scientific and military communities. Soon the military took control of Pakistan's nuclear programme.

The development of nuclear capabilities by China, India and Pakistan, in the last two decades has overlapped with growing geopolitical tensions being experienced by each. For China, the driver was tensions with the United States. For India, it was an admixture of China and Pakistan. For Pakistan, it is its relationship with India. This exogenous framework continues to interact with endogenous forces represented by the stakeholders in each country and drives the evolution of nuclear doctrines that shapes their arsenal.

Antagonistic US relations with Russia and China in the last two decades has resulted in confrontational responses that include territorial aggression through salami slicing (Maass 2021), trade wars, election interference, cyber-attacks, and manoeuvring in the South China Sea, East Asia, Indian Ocean, the Artic and elsewhere. China's quickening pace of military modernization has included its nuclear arsenal (Brown 2021). Great power competition is now being characterized not so much by a threat of major war; instead, the confrontation, though still under the nuclear shadow, is enacted by the use of tactical constructs described as "Grey Zone" conflicts and "Hybrid Warfare" (Dowse and Bachmann 2019). For India, these may be terms to describe what it has experienced with Pakistan for more than two decades.

The military in all three countries perpetually seek survivability, increased coverage of land mass and credibility. Military influence is manifested in the pursuit of survival through greater numbers and technological superiority, which is also accompanied by the urge to strike first. Militaries cannot easily countenance the notion that better outcomes are possible if they doctrinally adopt No First Use (NFU) postures.

Governments also pursue the development of weapons with greater ranges that cover all if not most of the landmass and maritime areas where the adversary's nuclear forces could be deployed and where the value targets are located. For militaries, which are directly responsible for projecting the credibility of their deterrence capabilities, the issue pivots on the effectiveness of the military role of nuclear weapons. This understanding tends to often ignore the instrumental role of the military and is bereft of political considerations that weigh heavily on risks involved and the probability of unacceptable political outcomes. An examination of politico-military proximity of each country is therefore necessary.

China

Civilian political control of the military in the development of China's nuclear doctrine indicates the subordination of the military. China believed that nuclear weapons had only a core role of preventing nuclear blackmail. Mao Zedong famously described nuclear weapons as paper tigers and announced an NFU doctrine soon after it exploded the nuclear bomb in 1964 (Korda and Kristensen 2021). It has steadfastly maintained that position.

China's nuclear modernization process has been progressively picking up pace for the last two decades. According to the US Annual Report to the Congress in October 2021 (Kristensen and Korda 2021), the key takeaways are:

- Modernization, diversification and expansion of nuclear forces in the 2020s.
- Expansion in the number of its land, sea and air-based nuclear delivery platforms along with construction of support infrastructure.
- Expansion of its capacity to produce and separate plutonium by constructing fast breeder reactors and reprocessing facilities.
- Possess 700 deliverable nuclear warheads by 2027 and 1000 warheads by 2030.
- A nascent nuclear triad has been established along with development of a nuclear air-launched ballistic missile and improvement of its ground and sea-based nuclear capabilities.
- Developments indicate an increase in peacetime readiness by moving to a launch-on -warning (LOW) posture with an expanded silo-based force.
- Probable development of low-yield nuclear weapons.

China's doctrine, posture and nuclear wherewithal indicates shifts that are aimed at improving survivability, reaction capability and credibility vis-a-vis the United States. Survivability is sought to be strengthened by increase in numbers; diversity, mobility and concealment of weapon platforms; hardening of infrastructure and speed in reaction capability. These moves indicate the growing influence of China's military in nuclear developments. There is a clear shift from the earlier posture of demated systems and the

reports of building additional missile silos is indicative. It is also the reason why the US report points to a possibility of moving to a LOW posture.

Among all these developments, the changes in alert status provide the greatest cause for concern for accidental nuclear war. For now, China could be joining the LOW club that in the post-Cold War period consisted of only the United States and the USSR. Early warning systems that are the lynchpin of LOW are natural targets in conventional conflict. But what is dangerous is their proclivity for malfunctioning due to technological failure, human error, or both.

In terms of the trilemma, China's potential shift in alert status is unlikely to have any major impact on the evolution of India's posture. India does not subscribe to the notion of a "bolt from the blue" but is cognizant that Sino-Indian nuclear dynamics could come into play during a conflict on the northern border. Any conflict that escalates to the level of alerting nuclear weapons must be avoided. This possibility exists only if China launches a major offensive across the Himalayas. Such a possibility exists mostly in the military imagination. However, politically, China uses such a threat to intimidate and draw India's meagre resources to the defence of its northern border with a view to slow down the development of its maritime capability. This is because China's military vulnerabilities lie in the maritime spaces of the Indo-Pacific.

China's territorial expansion has so far employed "salami slicing" tactics. These methods have served it well and there is no incentive for China to switch to another tactic. Salami slicing achieves changes in territorial status quo in small doses which are too small to invite military intervention by other powers. The larger threat of launching a major offensive is a psychological "force in being" wherein possession is meant to intimidate.

China's expanding influence in the maritime spaces of Indo-Pacific and the continental spaces of Eurasia is likely to witness the basing of early warning and targeting systems that would follow its Belt and Road Initiative (BRI). The risks of accidental nuclear war remain in the military frictions that prevail due to China's attempt to weaken the US ability for basing in East Asia and South China Sea. The Philippines is the most crucial of these, though Vietnam, Singapore, Thailand and Indonesia too, can play a key role for the United States. India's increased involvement with the Quad and other bilateral and plurilateral partnerships is unlikely to be a contributory factor to nuclear tensions.

Overall, the Sino-Indian nuclear equation is not per se a cause for concern. The concern instead arises from political support and the flow of technology from China to Pakistan and the use of its territory for logistics and operational sustenance of the conventional and nuclear assets.

India-Pakistan

India-Pakistan strategic instability is rooted in the historical and unresolved political disputes that animate their relationship. Developments in military capabilities are the downstream products of their strained relations. Being the smaller power, Pakistan perceives the Indian threat as one that requires balancing by development of its conventional and nuclear capability. The threat is also one that is blown out of proportion by its military to sustain its influence in its domestic power politics. Pakistan believes that nuclear weapons ensure its survival. In reality, Pakistan's conventional military capability

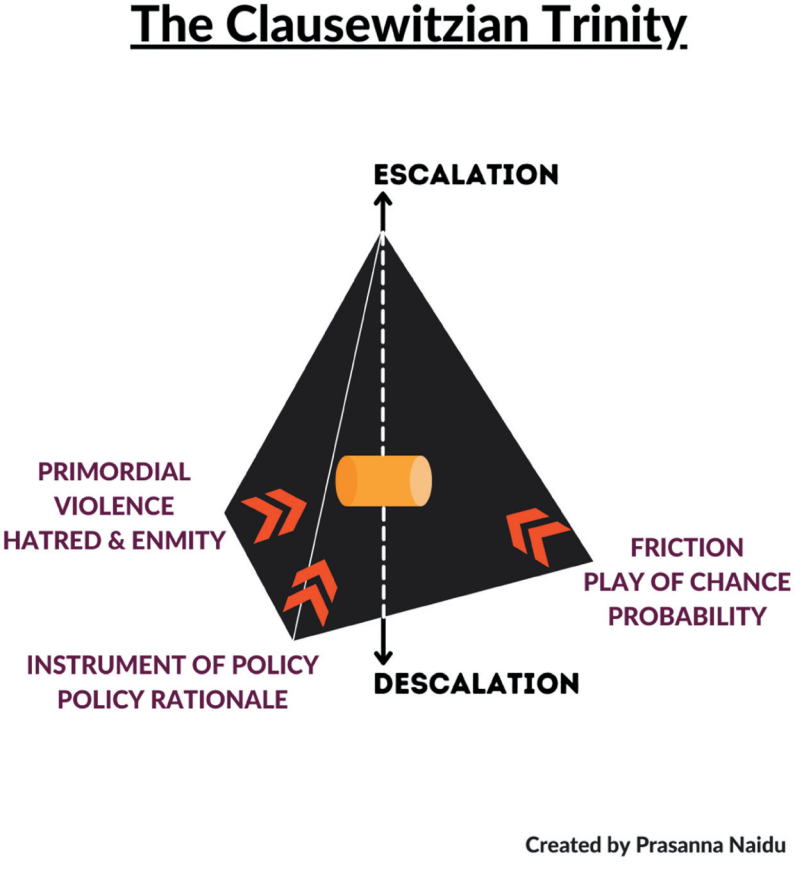
continues to be strengthened by assistance from China. When viewed within the framework of the simultaneous threat posed to India by China on the northern borders and the Indian Ocean, India's conventional capability as a reason for expansion of its nuclear capability is overblown.

The linkage of the potential for nuclear and conventional force application is deepened by Pakistan's continued use of terrorism as a tool of policy. Sporadic terrorist attacks carried out by Pakistan against targets in Jammu & Kashmir and the Indian hinterland hold the potential for a reaction scenario that can spiral speedily out of control and bring nuclear weapons into play. Two of the major military confrontations, Kargil in 1999 and the military mobilization that followed the attack on the Indian parliament in 2001 and the Mumbai terrorist attack in 2008 were contained through political rationality. Even after these major crises, attacks continue to occur. The attacks in Pathankot in January 2016, Uri in September 2016, and Pulwama in February 2019 being of recent vintage. However, despite force exchange, beyond the political rhetoric, leaders on both sides have exercised caution and stopped short of deliberate escalation. However, this should not be a cause for complacency. Instead, with the churn in the domestic politics of both countries, there is cause for growing concern.

Thus far, Pakistan has utilised the Indian nuclear and conventional threat to draw international attention and seek political intervention by the international community, especially the United States, to rein in India's reaction to terrorist attacks. Painting the India–Pakistan conflict scenario as a dangerous one is part of Pakistan's game plan to carry out terrorist attacks as part of its strategy of "bleeding India with a thousand cuts". This strategy is likely to be continued and could be perceived to gain momentum with the ascent to power of the Taliban in Afghanistan.

China can be expected to continue to pin down India's scarce resources by keeping its sword poised on the northern borders. India's attempts to overcome its precarious economic condition will require greater global engagement in terms of trade. China would leverage this requirement to influence India's posture in the global and regional geopolitical power play. An orchestrated upsurge in the northern border tensions can be combined with a terrorist attack by Pakistan. India's reaction will be driven by a popular emotional upsurge that demands revenge against Pakistan. The reaction and its potential for escalation into the nuclear realm will then traverse the terrain that is best illustrated by Clausewitzian concept of the Trinity.

Each state has its own trinity that is in tension with itself as well as with of the opposing side. Escalation and de-escalation are determined by the strength of three elements that generate forces that exert themselves on the magnet suspended between them. Pulls or pushes correspond to either escalation or de-escalation. The strongest force in the Trinity that could prevail in the aftermath of terrorist strikes would be the elements of hatred and enmity between the societies of India and Pakistan. The danger lies in the possibility that the forces of enmity and hatred could overcome the element of political rationality that has so far helped deescalate all previous India-Pakistan crises. However, what is of major concern is the combination of hatred and enmity and the uncontrollable elements of friction, play of chance and probability which can at its extreme, bring nuclear weapons into alert. Once on alert, the probability of accidental and inadvertent nuclear exchange increases. The focus of confidence-building measures



in the Indo-Pakistan context must therefore be on reducing the risks of accidental nuclear war and curbing the impulse for a limited war.

Limited War

India's concept of limited war was rolled out at a seminar in January 2000 held at the Indian think tank, the Institute of Defence Studies and Analysis (IDSA). Jasjit Singh, then Director of IDSA, in an article titled "Dynamics of Limited War", defined limited war as the following: "If nuclear war and total global war are no longer viable propositions as an extension of politics by other means, the only choice available to states to use destructive forces for political purposes is through limited conventional war, sub-conventional war with military-type weapons, and the use of coercive military force without necessarily resulting in war (Singh 2000).

Limited war remains untested in practice but the likelihood of short sharp engagements that change the status quo endures. Importantly, the problem of keeping it limited refuses to go away. In the case of India and Pakistan, the utility of force can change the status quo somewhat but cannot resolve the political problems that gave rise to force application in the first place. Neither military superiority nor operational virtuosity nor

political guile seems to provide any pathway to impose one's will through force. The paradigm that has endured with Pakistan and China is one of perpetual confrontation – crisis – short and sharp force exchange – confrontation. In the Indian context, limited war is not limited in time and space, it hides perennially in plain sight within the folds of seemingly intractable disputes with neighbours (Kumar 2021).

Cold Start Doctrine and Tactical Nuclear Weapons

The military fallout of the 2001 India–Pakistan crisis rekindled an old idea that finally became known as the Cold Start Doctrine. The new doctrine attempted to create the capability to launch attacks in the shortest possible timeframe by relocating offensive assets to the most forward positions possible, thus reducing the time needed for mobilization. Initial thrusts would subsequently be exploited by forces moved forward from the rear. However, Pakistan too moved its formations forward and embraced the idea of tactical nuclear weapons and exacerbated the nuclear danger.

Nuclear weapons have changed the bilateral character of military confrontations between India, China and Pakistan and supposedly played a role in most of India's major military confrontations with the two countries. The extent of that role and its impact on the minds of decision makers is difficult to fathom. However, exercise of caution is apparent, despite escalatory rhetoric on all sides. Although force has been exchanged, its escalation has remained tightly controlled by political rationale. Perhaps, the political leaderships have clarity that force has only restricted utility for solving problems between nuclear-armed powers. However, the probability of deliberate or accidental military situations getting out of political control cannot be ruled out. Therefore, while it is important to understand the mechanics of Limited War, it is better that the concept remains the last resort and is best if it is untested (Kumar 2021).

Nuclear weapons may have overall kept an uneasy peace so far and contained military engagements to acceptable limits. The continuation of such status quo is, however, dependent on the issues at stake in future confrontations and the appetite for risk of the political leaders which could be boosted by the proximity between the politician and the military.

In China, Xi Jinping's increasing authoritarianism is marked by the greater role of the military in national security decision-making. In Pakistan, the military remains in the driver's seat, giving it greater risk-taking proclivity. In India, despite the respectable distance maintained between civil and military, Modi's carefully constructed strongman image provides space for greater risk vis-a-vis Pakistan, the ideological struggle being the underlying driver. Against China, the adverse balance of power, serves to induce relatively greater caution.

Policy Recommendations

Policy recommendations must recognize the prevailing ambience of the ongoing interconnected and deepened global and regional geopolitical confrontation. China's evolving nuclear posture is driven by its confrontation with the United States. The US posture is driven by Russia and China. India's posture takes into consideration threats posed

individually by China and Pakistan as well as the possibility of a nexus between them. Pakistan's posture is India-centric.

The China–India–Pakistan nuclear trilemma exists as subsystem in the larger global geopolitical ambience. China does not recognize India as a nuclear-armed power and is unlikely to partake in any bilateral dialogue on confidence-building measures pertaining to nuclear weapons. In the conventional domain, till the onset of the Ladakh confrontation, peace on the disputed northern borders in the Himalayas was maintained through several agreements and memoranda of understanding (Zhang 2020). India and Pakistan also have some agreements aimed to foster confidence building and prevent accidental nuclear war (Pathania 2021).

The nuclear powers – the United States, Russia, China, France, the United Kingdom, India, Pakistan, Israel, North Korea – have all declined to be persuaded by the Treaty on the Prohibition of Nuclear Weapons (TPNW) that entered into force in January 2021. Also, when the Treaty was passed, 69 nations did not vote.

The lack of political will to tackle the menace of nuclear weapons is obvious. The Treaty is likely to remain an ineffective exercise until the political leaderships change their stance. But the leadership are imprisoned by accelerating global and regional power struggle. They are themselves products of deepened nationalism which prevents them from embarking on any path that can be perceived domestically as weakening national security. Following the historic trend, the global trend is to strengthen deterrence capabilities through alliances and partnerships, accompanied by the acquisition of armaments. There is political blindness to the historic break brought about by the advent of nuclear weapons. Worldwide, political leadership appears trapped in a global-level strategic quagmire.

The forces at play cannot be arrested by unilateral policy changes by national leaders. Such changes require trust and cooperation between parties concerned. Both are in short supply and likely to remain so. There is no doubt that bilateral confidence-building measures that essentially utilizes increased communications at various levels between Sino-Indian and India-Pakistan stakeholders must continue to be pursued, utilized and expanded to include people-to-people ties.

Such communication links at the political, diplomatic and military levels do exist and are being utilized to resolve frictions and deescalate tensions. But they may be inadequate to prevent accidental wars that contain the potential for escalation to the nuclear level. The inadequacy does not inhere in the nuclear weapons but is instead embedded in the inability of political rationale to control the momentum of action-reactions that can be driven by miscommunication, misjudgement and misperception. The long-term solution to the accidental war lies in the banning of nuclear weapons. But that is a bridge too far and unlikely to be achieved in the near future.

The trajectory of the twin threats of nuclear weapons and climate change can possibly be ameliorated only if three broad fronts are addressed simultaneously: The global public imagination as the prime driver to force the hand of political leadership; measures to prevent accidental wars; and pursuit of arms control.

Using the Global Public Imagination

The global public imagination can act as a force that frees political leaderships from pursuit of narrow national interests, especially those that entail taking greater risks.

Presently, the twin threats of climate change and nuclear weapons are treated separately. However, clear evidence of climate upheaval has already caught the global public imagination, forcing political leaderships to at least promise to undertake mitigation measures. The international scientific community has played a major role in publicizing the effects of climate change and in suggesting mitigation measures. A similar effort is required for nuclear weapons and the combined effects of nuclear explosions and climate change.

The technologists that created the nuclear weapon and the strategic community that provided logical fuel for its utility must come together at the global level to inform the public regarding the short-term and long-term consequences of nuclear war. The possibility of accidental nuclear war must also be publicized. With the expanding reach of the internet and the social media, orchestration of narratives and publicity on a global scale is possible.

Conceptually, the idea is to create pressure on the entire global leadership through the mobilization of the masses. It must be conducted as information warfare by sharing knowledge about the dangers of accidental nuclear war and the short and long-term effects of nuclear explosions. The target should be the minds of the global populace and information must be the weapon. Ideally, the United Nations should be responsible for this. But, considering the hold of nuclear powers on the working of the UN, the movement will have to be based at least initially, outside the existing international mechanisms. Fortunately, there are already in existence, organizations like the Federation of American Scientist (FAS) that can provide the kernel for fostering international cooperation between similar groups in other countries that must necessarily encompass technologists, strategists, diplomats and military communities. FAS can lead and even harness the support of non-nuclear states.

Strategic Stability Through Mutual Vulnerabilty

The pursuit of survivability through increased alert levels coupled with efforts to undermine technological advances in defensive efforts to create missile shields is a major driver of the current arms race. Survivability is dependent on minimizing the possibility of non-initiation of nuclear weapons exchange. With political acceptance of the fact that "nuclear wars should not be fought and cannot be won", deliberate initiation of nuclear exchange would amount to "committing suicide due to the fear of death". It is therefore difficult to imagine that any political stakes at issue would warrant the deliberate first use of nuclear weapons against another nuclear power.

The idea of a "flexible" nuclear response being an option to counter conventional threats opens the door to uncontrolled nuclear exchange. Though tactical nuclear weapons have been touted as providing the space to halt escalation, the concept relies on the thin ice of assuming a mellowed reaction from the targeted adversary. On the contrary, once nuclear use commences, the risks of uncontrollable escalation are far too much. Therefore, it is only by maintaining mutual vulnerability that strategic stability can be maintained.

Conceptually, maintaining mutual vulnerability becomes acceptable if there is recognition that even a successful disarming first strike can pose existential risk due to the consequent climate change effects. However, this will only result from engaging public imagination.

If there is global acceptance that the path to strategic stability is mutual vulnerability, the possibility of minimizing alert levels opens up. But the acceptance of mutual vulnerability requires the jettisoning of notions like "bolt from the blue". Such ideas must be demolished through scientific evidence that demonstrates that even nuclear explosions in the low hundreds could cause climatic changes that can metamorphize into global level social frictions due to its impact on bio systems worldwide. In other words, even a regional nuclear exchange is a global threat.

Global No First Use

Enhanced alert levels through the embrace of Launch on Warning or Launch Under Attack postures pose the greatest risk during peace, military confrontations and conflict. A global NFU treaty offers a pathway to reduction of alert levels. But such a treaty must be preceded by the restoration, in a modified form, of the earlier version of the ABM Treaty. It must incorporate all nuclear powers and limit the creation of defences to two sites that can be nationally determined. It must also include cruise missiles and other versions under development like the hyper-sonic glide vehicles.

The issues that pose obstacles to a global NFU are extended deterrence and submarine launched missiles. Extended deterrence has perhaps kept proliferation in check but has increased the probability of nuclear use. However, if there is recognition that any initiation of nuclear weapons for military purpose carry unacceptable risks, the umbrella of extended deterrence can rest its credibility on the possibility of a nuclear reaction to first use. Countries under the nuclear umbrella must accept that no other power is going to risk its own nuclear destruction to help them. The driver of a global NFU, therefore, is the political acceptance that nuclear weapons must be confined to the core deterrence role of deterring their own kind.

Deterring other weapons of mass destruction like chemical and biological weapons may require a threat to retaliate by nuclear means. However, since chemical and biological weapons do not match the speed and scale of destruction of nuclear weapons, the option for retaliation may be retained and exercised if the effects of actual use is perceived as unacceptable (Ministry of External Affairs 2003).

Military doctrine's and technology's natural quest for vulnerability exploitation is the driver of the arms race. Historically, the advantages accrued are defeated by counter moves in doctrine, operational innovations and technological developments. This endless cycle can only be arrested by arms control agreements.

Arms Control

Arms control is subjected to a paradox that often defies its utility. The paradox arises from the fact that nations are most amenable to arms control when political relationships are relatively cordial. However, arms control is extremely difficult when relationships are undermined by distrust and hostility. Therefore, arms control is possible when one does not require it and when needed, it is not feasible.

In the current geopolitical ambience, it may seem that arms control is a no-show. The only possibility of change is from the pressure that could emerge from the front of global public imagination. This will require a widespread recognition that the enormous financial

outlays diverted into the arms race can used to mitigate the effects of climate change. It can start with the restoration and reconfiguration of treaties that the United States has withdrawn from. The main ones are the ABM Treaty, the Intermediate-Range Nuclear Forces (INF) Treaty, the Joint Comprehensive Plan of Action (JCPOA), and the Open Skies Treaty.

The ABM and INF treaties are bilateral treaties that have to be reconfigured to include other powers. The ABM Treaty will have to be global and include all nuclear powers. Considering the dynamics of the INF Treaty, it must now be worked out between the United States, Russia and China. This might look difficult at first sight, but solutions that limit numbers instead of banning weapons may hold potential for success. Banning could be resisted by respective military leaderships while restricting numbers holds some promise of achievement.

Conclusion

The China–India–Pakistan nuclear trilemma is not amenable to being treated in a vacuum. The internal drivers of India, China and Pakistan are reactionary forces that are shaped by exogenous forces that emanate from the global nuclear environment. It has to be addressed as part of the larger global nuclear weapons dilemma. The global dilemma does not stem from the weapons per se but are rooted in beliefs about the utility of nuclear weapons. Some of the assumptions on which the foundation is built have been exposed as impractical and dangerous. Climate change through nuclear explosions is a prime revelation that upends any chance of achieving victory through a first strike. So also is the inability to control escalation after the first nuclear weapon is unleashed, even if it is described as a tactical weapon strike. The gulf between strategic theories and military realities is evident.

Though there is acceptance that nuclear wars should not be fought, the interconnectivity of geopolitical frictions, primarily born of China's rise, must be addressed holistically as part of one system. Addressing the three fronts described earlier could start a process that may hold promise to improve strategic stability. Confidence-building measures based on openness and multiple levels of communications are useful too. They are to be undertaken bilaterally and make room for improvement in the Sino-Indian and Indo-Pakistan equations.

Recognition that accidental war might originate with minor incidents and speedily escalate must result in calls for minimizing the alert levels of nuclear weapons. This must be discussed at the global level. Sensitizing the global public imagination is a necessary condition to trigger progress in the reduction of alert levels and Arms Control.

In the China–India–Pakistan nuclear trilemma, the acceptance that territorial claims should not be settled by use of force should be the wisdom that animates the strategic relations between the three countries. The somewhat positive aspect of the role of nuclear weapons within the trilemma has so far been the caution exercised by all powers during the numerous crises that have occurred ever since nuclearization. Technological developments and their products in terms of new types of weapons and the perpetual search for doctrinal and operational innovation are creating new dangers. Therefore, the issue of nuclear weapons must be seen as a process that can end as a global catastrophe or be reined in through political wisdom. So far, and especially during the Cold War,

providence may have been on the side of humanity. One should not rely on such "acts of god" to prevent the use of nuclear weapons. Action on an emergency basis is called for.

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