Comprehensive Strategic Deterrence to Meet India's Future Challenges

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New Delhi (India)

Manohar
2025

Price: ₹250

Contents

Introduction

"Everything in deterrence is very simple, but the simplest thing is difficult".[1]

– Karl von Clausewitz

Deterrence is an age-old concept—the first Neanderthal who found a bigger stick to ward off enemies was practising deterrence. However, the formal development of deterrence theory came about after World War II to find ways to manage and utilise nuclear weapons. Preventing military attacks and war, especially nuclear war, was the ultimate initial objective of the deterrence and deterrence theory. Since then, deterrence has become a cornerstone of international security affairs.

Developed in the context of the high-conflict environment of the Cold War between two nuclear-armed superpowers, deterrence theory had gone through three waves. The First Wave of deterrence theory, developed in the years immediately after World War II by scholars such as Bernard Brodie, Arnold Wolfers, and Jacob Viner, addressed the immediate threat of Soviet nuclear capability. The Second Wave, developed a decade later, applied game theory to nuclear strategy. Though it was immensely popular, but it was criticised because it overestimated the rationality of decision-makers, especially under high stress. Rationality may be neither necessary nor sufficient for deterrence. Third Wave of deterrence theory evolved in the 1970s and it used 'Statistical and case-study methods to empirically test deterrence theory'.[2]

These waves roughly corresponded to the diverse security challenges faced by the United States (US) in the nuclear age and efforts by analysts to tackle them. In essence, these waves generally addressed state-on-state relationships. Strategic threat was generally focused on the use of nuclear weapons or a major conventional war with the Soviet Union (later Russia) or China. Deterrence was a policy tool devised to prevent conventional escalation in Europe or nuclear holocaust between the superpowers. Other aspects of first to third wave theories, including low-intensity conflict, were of least considerations.[3]

When the Cold War ended, the bipolar equation was no longer relevant. In the post-Cold War era, the international system became extremely complex, characterised by multiple threats, multiple actors to include rogue states as well as non-state actors, and different types of conflicts in which deterrence, based on threat of retaliation as anticipated in theory, became questionable. The reluctance of the US and its western allies to use lethal force to restrain the emerging challengers has provided fodder to the suspicion on the effectiveness of deterrence as a strategy.

There is a growing belief that since the end of the Cold War, the US nuclear deterrence has been marginalised and overshadowed in favour of conventional deterrence. On the other hand, the US' adversaries have evolved the roles, responsibilities, and capabilities of their nuclear forces, as also integrated these forces with conventional concepts and capabilities, thereby, using a hybrid conventional-nuclear approach to influence and shape regional security dynamics.[4] Further, the emergence of new domains like space and cyber has made the achievement of deterrence more complex.

In the Indian sub-continent, India enunciated its nuclear doctrine or rather nuclear deterrence based on the principles of 'No First Use' and 'Massive Retaliation' employing its second-strike capability. However, Pakistan recently introduced tactical nuclear weapons in its nuclear arsenal to challenge India's conventional

superiority and as a counter to its Cold Start Doctrine. Their spokespersons have begun using the terms like 'Full Spectrum Deterrence' and 'Flexible Deterrence Options' to describe Pakistan's nuclear posture.[5]

Though, deterrence is fundamentally not about the 'Fighting of War' to achieve the aim of national security but rather its objective is the 'Avoidance of War'. However, in the emerging international security environment, countries are adopting nuclear/non-nuclear hybrid approach, thereby, necessitating a more comprehensive, integrated, cohesive and mutually supportive approach to deterrence. Hence, there have recently been several noteworthy initiatives to enlarge or modify the scope of deterrence, which have given rise to terms like 'Cross-domain Deterrence', 'Integrated Strategic Deterrence', 'Dual Deterrence', 'Comprehensive Deterrence', 'Extended Deterrence', 'Triadic or Indirect Deterrence'[6] and so on.

Chapter 1

Concept of Deterrence

Defining Deterrence in International Security

First of all, it is important to distinguish deterrence theory from deterrence strategy. Deterrence strategy refers to the specific military posture, threats, and ways of communicating them that a state adopts to deter, while the theory concerns the underlying principles on which strategy is to rest. Failure to understand this is largely responsible for the mistaken notion that there are many theories of deterrence. Mostly, there are different strategies, not theories. The strategies vary in how they operationalise key concepts and precepts of the theory.[7]

To evaluate the applicability and limitations of deterrence in the current and emerging international security environment, one can start with its simple definition:

> "Deterrence is the practice of discouraging or restraining a potential opponent—in world politics, usually a nation-state—from taking unwanted actions, such as an armed attack".[8] Or in other words, "Deterrence is simply the persuasion of one's opponent that the costs and/or risks of a given course of action he might take outweigh its benefits".[9]

To enable deterrence to function, three essential ingredients, popularly known as the 'Three Cs' of deterrence i.e., Capability, Credibility, and Communication must be in place. First, the

deterrer must have the capability to impose the costs he has promised or threatened. Second, the deterrer's threat must appear to be credible to the potential adversary or enemy. Further, credibility of threat not only includes appropriate capability in terms of quantity and quality but also the deterrer's will—personal, political, or moral—to carry out the threat. Third, this can be communicated to and understood by the adversary. In essence, it entails that deterrence is a relational activity, in which both sides must employ a broadly compatible rationality.[10]

General versus Immediate

Based on the extent of time period involved, deterrence is broadly categorised as general and immediate. General deterrence is the ongoing, persistent effort to prevent unwanted actions over the long term and in non-crisis situations. Immediate deterrence pertains to short-term, urgent attempts to prevent a specific, imminent attack, most typically during a crisis. For example, the US employed general deterrence for decades by publicising ongoing promises of defence and punishment if the Soviet Union attacked western Europe. On the other hand, in a crisis situation when the US feared that Soviet aggression against Berlin was imminent, it engaged in a distinct task of immediate deterrence.[11]

Thus, general deterrence is a much larger, more common, and more durable phenomenon: it might extend for decades. Immediate deterrence is scarier and intense, though often brief in application or implementation.[12]

Denial versus Punishment

There are two basic ways to deter an enemy. One is to deter an enemy to make it physically difficult for him to achieve his objective i.e., deterrence by denial. This form of deterrence depends on fear, as also on costs that will be inflicted during the act of aggression, in the place where it occurs. It seeks to make aggression unprofitable

by rendering the target harder to take, harder to keep, or both. To achieve this, the defender has to have sufficient lethal capabilities in or near the likely site of aggression to demonstrate that victory will be either impossible or difficult to attain. The defender's capabilities should be known to be able to inflict substantial pain, not in counterattack but in defence. Deterrence by denial is different from the concept of 'Tripwires', which are small forces placed in harm's way to activate retaliation rather than to inflict pain.[13]

A second way to deter an enemy is to threaten to hurt him if he attacks you or your allies i.e., deterrence by punishment. This form of deterrence depends on fear that the defender will inflict a level of pain that exceeds whatever gains the attacker hoped to achieve through aggression. For this form of deterrence to be effective: the defender's threat must be credible; he has to possess sufficient lethal capabilities to carry out the threat; his weapons have to be known to be capable of reaching the attacker, evading or overcoming his defences and either defeating his forces, causing catastrophic loss to his population, or both. It should also be clear that the defender is deeply attached to the object he is defending and what forms of behaviour will prompt retaliation.[14] In the modern era, America's extended deterrence has been based on deterrence by punishment.

Deterrence versus Compellance

Professor Thomas C Schelling, the Nobel laureate and American economist and nuclear strategist, in his seminal work 'Arms and Influence' had coined the term 'Compellance': "What do we call the threatening action that is intended not to forestall some adversarial action but to bring about some desired action, through 'Fear of consequences'? Coercion covers it, but coercion includes deterrence—that is preventive action—as well as forcing action through fear of consequences. To talk about the latter, we need a word. I chose 'Compellance' ". He elaborated, "Compellance is

more like 'Offence'—taking something, occupying a place, or disarming an enemy or a territory, by some direct action that the enemy is unable to block. Compellance is inducing his withdrawal, or his acquiescence or his collaboration by an action that threatens to hurt". He had identified deterrence with defence and compellance with offensive.[15] In essence, deterrence and compellance are two types of coercion, which rely on threats to motivate the adversary to comply with a coercer's demands, but they differ about nature of these demands. Deterrence demands that the adversary refrain from acting, whereas compellance demands that the adversary undertake action.[16]

The Cuban Missile Crisis is an excellent example, where passive deterrence failed leading to the application of compellance. The US made verbal threats against the installation of weapons in Cuba but either the threat was unclear or it lacked credibility and it was transgressed. Since the Soviets had crossed the line, by the time the then-US President John F Kennedy determined to resist, he was no longer in a deterrent position and had to embark on compellance. The problem was to prove to the Soviets that a potentially dangerous action was forthcoming—an action that would promise damage if the Soviets did not comply. After considering various alternatives, a blockade was thrown around the island. A blockade, by itself, could not make the missiles go away. The blockade did, however, threaten a minor military confrontation with major diplomatic stakes—an encounter between American naval vessels and Soviet merchant ships bound for Cuba. Once in place, the Navy was able to wait; it was up to the Soviets to decide whether to continue. Thus, an initial deterrent threat failed but a compellent threat was called for and it succeeded when the Soviets removed their missiles from Cuba.[17] In the present context, forcing or coercing a nation to abandon its nuclear weapons development program is also an example of compellance.

Graduated Deterrence: Dissuasion–Deterrence by Denial–Pre-emption/Prevention

Dissuasion is the term used by the French for deterrence. The US Department of Defence gave dissuasion a specific definition in the Quadrennial Defence Review, "Dissuasion is the means to persuade other powers to refrain from initiating an 'Arms Race' or competition in military capabilities with the United States". The former US Secretary of Defence Donald Rumsfeld described the logic of the concept by giving an example, "We must develop new assets, the mere possession of which discourages adversaries from competing. For example, deployment of effective missile defences may dissuade others from spending to obtain ballistic missiles, because missiles will not provide them with what they want: the power to hold the US and allied cities hostage to nuclear blackmail".[18]

If dissuasion does not work, arms competition and conflicts may follow, leading to a change in the goal, which will become deterring aggression or coercion. During the Cold War, the dominant form of deterrence was deterrence by punishment, but the US strategists had advocated supplementing it with deterrence by denial to overcome such situations as the latter would persuade the enemy not to attack by convincing him that his attack would be defeated or he will not be able to achieve his operational objectives. This approach to deterrence was elaborated in the Nuclear Posture Review (Jan 2002), "The United States could employ missile defences to discourage attack by neutralising enemy attack plans. In other words, if the missile defences do not discourage an enemy from acquiring missiles (the goal of dissuasion), alternatively, they might discourage him from using them (the goal of deterrence by denial)". The deterrence by denial theory is not limited to missile defences only. It applies to any capability that can deny an enemy success in achieving his objectives, e.g., passive measures like decontamination equipment and nuclear, biological, and chemical protective gears might help to convince

an enemy not to use such weapons. The US National Security Strategy supports this "Minimising the effects of Weapons of Mass Destruction (WMD) use against our people will help deter those who possess such weapons and dissuade those who seek to acquire them by persuading enemies that they cannot attain their desired ends".[19]

Further, deterrence may fail and war may come with little warning. This eventuality may necessitate the option of pre-emptive action. It was visualised in the US National Security Strategy that "Traditional concepts of deterrence will not work against a terrorist enemy Rather, rogue states and terrorists would rely on acts of terror and potentially the use of WMD" and for that "The US has long maintained the option of pre-emptive actions to counter a sufficient threat to (our) national security". The US government has opted to call 'Pre-emptive' what many Americans, Europeans and others prefer to call 'Preventive war'. The subtle distinction between the two is: Pre-emptive attack consists of prompt action based on evidence that an enemy is about to strike, whereas preventive war involves military operations undertaken to avert a plausible but hypothetical future risk. One of the main justifications advanced by the US government for the military campaign against Saddam Hussein's regime in Iraq in Mar–Apr 2003, was the possibility of a transfer of WMD to a terrorist group.[20]

Chapter 2

Post-Cold War Variations of Deterrence

Evolution of Deterrence During the Cold War

With the invention of nuclear weapons and the beginning of the Cold War, functioning of deterrence became a critical necessity. But the evolution of nuclear deterrence was not as automatic as it was expected. After their use against Japan in Aug 1945, for some years nuclear weapons were seen as an extension of strategic air power, further augmenting its existing doctrines. However, nuclear weapons, in fact, were much more potent than an expensive conventional force and could offset weaknesses of conventional defences, that too at a time when the conventional strength of the Soviet Union remained overwhelming while the US and its European allies had demobilised rapidly after the war.[21]

This gave birth to an offset strategy, which advocated the use of technological superiority to compensate for perceived imbalances and weaknesses in conventional military strength. The US pursued two offset strategies. The first came with former President Dwight D. Eisenhower's 'New Look Strategy' in the early 1950s. When President Eisenhower came to the office in 1953, the US was heavily outnumbered by the Soviet conventional superiority on the European central front: 92 US and North Atlantic Treaty Organisation (NATO) divisions were appreciated to check 175 Soviet divisions at the time and that was neither politically nor economically viable. So, to counter Soviet superiority, New Look

Strategy was evolved. It advocated reliance on nuclear arsenal for deterrence and in return, reduction of military manpower. Since the US had a very substantial lead at the time, the technological advantage in nuclear weapons and their delivery systems provided the most effective offset to the Soviet strength and their geographical advantage.[22] This strategy provided a credible deterrence but soon the Soviets started gradually building up their tactical and strategic nuclear forces. As the Cold War advanced, nuclear deterrence became far more elaborate to the extent that it could no longer be considered a component of one side's politico-military strategy since both the superpowers possessed the matching nuclear capability. This led to the phenomenon of 'Mutual Deterrence' or in other words, the doctrine of 'Mutually Assured Destruction'.[23]

By 1970s, the US no longer had a credible deterrence. In response, the US developed a Second Offset Strategy. Soviet's strategy was to attack with echelon forces, deep behind the forward edge of the battle area. The US Defence Advanced Research Projects Agency recommended employment of conventional weapons with near-zero miss, which resulted in the development of a system of systems called 'Assault Breaker'. This was demonstrated very successfully in 1982 at the White Sands Missile Range in New Mexico. It was watched by the Soviets and in their words, it was "Using very accurate terminally guided conventional munitions that would achieve the same destructive effects as tactical nuclear weapons". Thus, the US gained a competitive advantage that they knew Soviets would not be able to replicate so soon and, thus, injected uncertainty in their minds.[24] The Assault Breaker program led to the formulation of 'Follow-on Forces Attack' and 'Air Land Battle 2000' doctrines, which had an aggressive first mover advantage. This was successfully demonstrated to the rest of the world in 1991 during Operation Desert Storm when the Iraqi heavy formations built on the Soviet model were decimated and again in 2003 during the initial invasion of Iraq War. The Second Offset Strategy, like the first, provided the US military and its allies with a decisive operational advantage for almost four decades but now those advantages are fast eroding.[25]

Post-Cold War Deterrence

In the post-Cold War scenario, mutual strategic deterrence of the Cold War appeared to have become irrelevant because earlier the adversaries were the US and Europe versus the Communist Bloc. The changed scenario has certain peculiarities: First, the US now faces multiple potential competitors or adversaries, ranging from small states like North Korea and Iran, to large advanced states like Russia and China, to non-state adversaries and actors with advanced capabilities; Second, in the 1950s and up to 1990s, generally the technological advances were military capabilities, which were produced by military laboratories. But now with robotics, Artificial Intelligence (AI), autonomous guidance and control systems, advanced computing and big data analytics, miniaturisation, and additive manufacturing like 3-D printing, all advancements are being driven by the commercial sector.[26] Third, the US' adversaries have visualised that they cannot compete against its strengths, hence, they are seeking its vulnerabilities to counter these with unconventional measures, as also develop anti-access/area-denial weapons and other advanced technologies. This aspect of deterrence i.e., the ability of the weak to deter the strong, was neglected during the Cold War but has become more apparent today. Deterrence theory, as developed during the Cold War, dealt with how militarily superior powers could deter adversaries that were either inferior or equal in capability. It has now been proven that weak states or even non-state actors can use innovative asymmetric means including employing ingenious strategies and tactics to deter a stronger adversary.[27] China's development of advanced weapons and equipment is based on the principle 'What the enemy fears is what we develop'.[28] Fourth, the war fighting is not simply limited to nuclear and conventional but it has become much more complex giving rise to multi-domain, asymmetric, hybrid conventional-nuclear approach, and new generation warfare.[29] Fifth, emergence of a new phenomenon called 'Self-deterrence', which can be defined as 'The unwillingness to use coercive military power against an adversary, despite a declaratory

threat to do so, due to self-imposed as opposed to other imposed constraints'.[30] Thus, a nuclear state may not be able to mount and execute a nuclear retaliatory strike against a non-nuclear state or a non-state actor for reasons beyond military calculations. The nuclear state could be restrained by moral, legal, and other normative consideration.[31] Further, deterrence has become much more complex and multifaceted, much more multilayered and getting involved in fighting as well as in preventing fighting. This has given rise to increasing use of special operations forces by the US.[32]

The fundamentals of deterrence may still be valid in the post-Cold War scenario but there is not going to be a single specific deterrence strategy that will be sufficient against all potential adversaries and all emerging capabilities. A much more agile and innovative deterrence strategy or rather competitive strategies must be devised to meet the futuristic requirements. Some of these emerging concepts are described as under:

- **Third Offset Strategy**. Developed under the Obama Administration, the goal of the Third Offset Strategy is to increase the competitive advantage of American forces and its allies over their adversaries in the coming decades. Taking into consideration the varied threats, this approach is being referred as 'Offset Strategies'. Because, when applied to Europe, the US will have a high technology component as well as an innovative whole-of-government concept to counter the ambiguous hybrid threats as were seen in Crimea and Ukraine. Whereas in the Pacific, the offset strategy is focused primarily on overcoming anti-access and area-denial network. Further, this strategy is not all about technology but combines it with the 'Defence Innovation Initiative' in which leadership development also plays an important role so that in certain areas like the Middle East, rather than depending on employment of large ground forces, the problem is addressed in different innovative ways.[33]

• **Integrated Deterrence.** To meet the contemporary challenges to the European security order, analysts have determined that 21st Century European deterrence requires a range of capabilities (passive and active, military, and non-military) in a posture which is both coherent and credible and which can be communicated unambiguously to any potential adversary. The concept has been named as 'Integrated Deterrence' and is considered as the optimal response to hybridised, cross-spectrum strategic challenges. It has four elements: One, 'Vertical Integration', that concerns the coherence of all military components of deterrence, from the nuclear to the conventional and from the strategic to the operational and tactical levels of war, including the capability and effect of individual commanders and troops; Two, 'Horizontal Integration', that ensures integration of all relevant governmental and non-governmental bodies required in the deterrent effort; Three, 'Functional Integration', as the name suggests, relates to integration of functions and activities, contrary to the horizontal integration, which applies to departments of government and non-governmental organisations. In the post-Cold War era and that too in the 21st Century, cyberspace has emerged as a critical medium, vital to human activity on every conceivable level–political, economic, social, cultural, and individual. It is also increasingly vital to strategic affairs and is not only essential for communication—one of the essential '3Cs' of deterrence—but has itself become a battleground. Therefore, it is essential that cyberspace retains its functional integrity; Four, 'Temporal Integration', is an exercise to ensure that integrated deterrence can be maintained over time and as circumstances change in future, which is always unpredictable.[34]

• **Full Spectrum Deterrence.** In the United Kingdom, the strategy employed by the government for deterring all types of threats by state and non-state actors, including hybrid warfare is called 'Full Spectrum Approach'.[35]

• **Comprehensive Deterrence.** Since 2009, the US and its allies have pursued a comprehensive approach for strengthening regional deterrence architectures and adapting these to 21st Century scenario. This comprehensive approach encompassed a favourable balance of conventional forces; ballistic missile defences, both regional and homeland; resilience in cyberspace and outer space; and a 'Tailored Nuclear Component'. These sets of capabilities need to be related to one another in a synergistic manner so that one set can compensate for deficiencies in another, enabling comprehensive deterrence to be achieved.[36] On 30 Oct 2015, the US Army Special Operations Command facilitated a senior leader forum, hosted by the US Special Operations Command and the US Department of State to explore the concept of comprehensive deterrence. The definition of comprehensive deterrence arrived at and stated in the white paper is the "Prevention of adversary action through the existence of credible and proactive physical, cognitive and moral capabilities (loosely defined as will power) that raise an adversary's perceived cost to an unacceptable level of risk relative to the perceived benefit".[37]

• **Cross-Domain Deterrence.** For understanding deterrence, domains are defined as categories of weapons effects—nuclear, conventional, space, cyber, missile defences, electronic, chemical, biological etc. Cross-domain deterrence involves 'Making retaliatory threats from one domain to prevent attacks from another'.[38]

Chapter 3

China's Concepts of Strategic Deterrence

China's Evolving Concept of Strategic Deterrence

It is conventional wisdom to consider strategic deterrence as synonymous with nuclear deterrence, the top rung of the escalation ladder. However, China does not consider it that way. China's strategic deterrence concepts are evolving and expanding, along with strides made by it in strategic weapons capabilities. Having relied on relatively rudimentary strategic capabilities for decades, China has developed and deployed a variety of new strategic weapon systems in recent years.

There is much more to China's thinking about strategic deterrence than new weaponry. In China's view, deterrence is based on all the components of 'Comprehensive National Power' to include both military and non-military capabilities. For China, powerful military capabilities of several types—nuclear, conventional, space, and information warfare—are all essential components of a credible strategic deterrent. Non-military aspects of national power—diplomatic, economic, scientific and technological strength, and even political and cultural unity—also contribute to strategic deterrence alongside military capabilities.[39]

Beijing had first articulated the concept of integrated strategic deterrence more than a decade ago: China then possessed a small and potentially vulnerable nuclear force; its long-range conventional strike capabilities were limited; and its space capabilities were relatively modest. Thereafter, China has made impressive strides in nuclear, conventional, space, and information warfare to support its concept of integrated strategic deterrence.

The Chinese term for deterrence, *'Weishe'*, does not distinguish between deterrence and compellance. *Weishe* embodies both concepts as mechanisms for compelling an opponent to submit to the will of the deterrer. Further, China sees deterrence and warfighting as complementary to each other i.e., deterrence extends into the combat phase of conflict to undermine the enemy's will to resist. Contrary to this, in case of the US, war is the consequence of deterrence failing.[40]

Roughly once every 10-15 years or so, the People's Liberation Army's (PLA) influential Academy of Military Sciences issues a new edition of the Science of Military Strategy (SMS), a comprehensive, generally authoritative study of the PLA's evolving strategic thought. It is the result of dozens of high-level PLA authors working together over a period of years to produce a heavily vetted consensus document. The 2005 edition of the SMS states that different countries have different means at their disposal to deter. China, for example, has nuclear weapons, conventional power, and a people's war capability. "By combining these means of deterrence, an integrated strategic deterrence is formed, with comprehensive national power as the basis, conventional force as the mainstay, nuclear force as the backup power, and reserve force as the support".[41]

According to the 2013 edition of the SMS, "Military Strength, in particular strategic strike strength, is the main body of military deterrence strength, as well as the most basic, direct, and effective factor in carrying out strategic deterrence".[42] In Chinese thinking, military component includes China's nuclear, conventional, space, and information warfare capabilities.

Nuclear Deterrence

According to the Chinese Military Encyclopaedia, China had developed nuclear weapons under coercion, with a view to break the superpower's nuclear monopoly and to guard the Chinese people against the threat of nuclear war.[43] Chinese military writings suggest that Beijing sees nuclear deterrence as one of the most important forms of strategic deterrence and considers the deterrence effects of nuclear missiles as unmatched by any other weapons.[44] China distinguishes various levels of nuclear deterrence. Its strategy, thus far, has been one of 'Minimum' nuclear deterrence, in which a small number of nuclear weapons can retaliate against cities, but China may be heading toward 'Moderate' nuclear deterrence, which threatens a greater level of retaliation.[45]

Conventional Deterrence

In 1993, the Central Military Commission assigned Second Artillery the mission of 'Dual deterrence and dual operations', which emphasises the importance of deterrence and combat roles for both the conventional and nuclear missile forces. The objective of conventional missile force deterrence operations is to influence the enemy's decisions by convincing them that China's missile force has powerful strike capabilities and that Beijing has the will to use them if necessary to prevent the enemy from challenging China's interests or to compel the enemy to accept Beijing's demands.[46] Chinese military writings suggest that even though conventional military deterrence is not as powerful as nuclear deterrence but it is becoming more important as conventional weapons become more accurate and capable. SMS 2013 contends that conventional weapons are more usable and offer much greater flexibility than nuclear weapons[47]; obviously as the latter are associated with colossal destruction of human life and property and long-term environmental hazards. One can easily imagine or rather convincingly appreciate that conventional deterrence could

be applied to realise Beijing's objectives vis-à-vis Taiwan or in its maritime territorial disputes in the East and South China Seas.[48]

Space Deterrence

China has been pursuing for space dominance since few decades and further with the beginning of the 21st Century, China has shown growing interests in the space domain to meet the future challenges. Development of military space forces by China will enable her to consolidate and strengthen her strategic deterrence capability and push forward the PLA's strategic transformation.[49] Space forces and space deterrence play important roles in crisis or conflict situations, when they can be employed to give clear deterrence signals, such as by displaying Anti-Satellite (ASAT) weapons or carrying out limited attacks against enemy space systems. Space deterrence can be used during peacetime also when the development and elevation of one side's space systems can potentially influence and constrain the military activity of other nations, thereby, resulting into deterrent effects, e.g., peacetime testing of a new ASAT capability could contribute to deterrence by demonstrating China's growing ability to hold enemy satellites at risk.[50]

Information Deterrence or Cyberspace Deterrence

The use of information to deter or compel an adversary has been a feature of Chinese military thought for millennia. The authors of SMS 2005 have highlighted the saying of Sun Tzu while deliberating upon this topic: "The best result information deterrence pursues is to 'Subdue the enemy without fighting' and strive for winning the victory of war by confrontation without shedding blood".[51]

   Having visualised the information dependency of their potential adversaries, including the US, Chinese strategists consider information operations akin to a pre-emptive strike, which can be

launched to gain information dominance. They believe that information operations will allow China to fight and win an information campaign, precluding the need for conventional military action.[52]

With the cyberspace having emerged as a new buzzword in this decade, PLA publications indicated that cyber or computer network warfare capabilities can also bolster China's strategic deterrence posture.[53] Though China has always denied its involvement in the offensive activities in the network domain, it is for the first time that the 2013 edition of SMS not only explicitly acknowledged that China has built up network attack forces, but has categorised these into three types:

- The PLA's 'Specialised military network warfare forces', which are military operational units specially employed for carrying out network attack and defence.

- 'PLA-authorised Forces', which are teams of network warfare specialists in civilian organisations such as the Ministry of State Security, the Ministry of Public Security, and others that have been authorised by the military to carry out network warfare operations.

- 'Non-governmental Forces', which are external entities that spontaneously engage in network attack and defence but can be organised and mobilised for network warfare operations.[54]

The new SMS has broken from the previous edition's vague talk of overall information objectives to concretely assert the centrality of cyberspace power to China's overall ability to project national power, engage in strategic deterrence, and defend itself in a conflict. This is the first time that an explicit acknowledgement was made of the existence of China's secretive network attack forces from the Chinese side, and it is particularly noteworthy that this acknowledgement extends beyond the military domain and into the network warfare capabilities of civilian government agencies.[55]

The SMS 2013 underlines the central role of peacetime 'Network Reconnaissance' i.e., the technical penetration and monitoring of an adversary's networks during peacetime, for developing the PLA's ability to engage in wartime network operations. According to the document, since the technical principles underlying successful penetrations of an adversary's systems are essentially the same whether the objective is reconnaissance or active disruption, at the appropriate moment 'One only need to press a button' to switch from reconnaissance to attack.[56]

Chapter 4

Comprehensive Strategic Deterrence as Envisaged for India

With two nuclear-armed neighbours, one on its West and another in the North, and Indian Ocean to its South, India faces tremendous challenges to achieve its national objectives.

Pakistan's Nuclear Doctrine and Hybrid Strategies against India

First and foremost, Pakistan, while formulating its deterrence strategy, included the possible use of tactical nuclear weapons. Considering the growing Indian advantage in conventional forces, Pakistan's powerful military leadership will always be opposed to the policy of 'No First Use' of nuclear weapons.[57] Rather, Pakistan has maintained doctrinal ambiguity to create uncertainty in the minds of Indian decision-makers. Lieutenant General Khalid Ahmed Kidwai (retd), long-time head of Pakistan's Strategic Plans Division, came the closest to articulating an official nuclear-use doctrine for Pakistan, when giving an interview to Italian researchers in 2002; he gave out the following as nuclear red-lines in a conflict with India:

- India attacks Pakistan and conquers a large part of its territory; the penetration of Indian forces on a large scale would elicit a nuclear response. The threshold could be low (some 50-100 km perhaps) in Kashmir and in Punjab (spatial threshold).

- India destroys a large part either of Pakistan's land or air forces; if Islamabad believed that it was losing the cohesiveness of its defence and feared imminent defeat (military threshold).

- India proceeds to the economic strangling of Pakistan. Economic strangulation refers primarily to a blockade of Karachi but could also concern the stopping of the Indus water flow or the capture of vital arteries such as the Indus and the Karakoram highway (economic threshold).

- India pushes Pakistan into political destabilisation or creates a large-scale internal subversion in Pakistan; if Islamabad believed that the integrity of the country was at stake (political threshold).[58]

In Apr 2011, Pakistan conducted test of a new nuclear-capable short-range missile, the HATF IX (also referred to as the Nasr). Pakistan is developing short-range tactical nuclear weapons to counter India's Cold Start doctrine or proactive military operations. Kidwai identified Nasr as a force multiplier and stated that when supplemented by other ballistic and cruise missile systems with longer ranges, it enhanced Pakistan's deterrent capability 'At all levels of the threat spectrum', including the strategic, operational and tactical levels. While speaking at Carnegie International Nuclear Policy Conference in 2015, Kidwai again reaffirmed that Pakistan's battlefield nuclear weapons are an extension of the country's conventional deterrence capabilities.[59] According to Major General Mahmud Ali Durrani (retd), Pakistan's former national security adviser, Pakistan's nuclear policy of credible minimum deterrence translates in to four objectives: One, deterrence of all forms of external aggression; Two, building to this effect an effective combination of conventional and strategic forces; Three, avoiding a pre-emptive strike through protection and the threat of nuclear retaliation; Four, stabilising strategic deterrence in South Asia.[60] Further, many analysts have opined that Pakistani military leaders rely on their nuclear deterrent as a cover for waging proxy war or low-intensity warfare against India in Kashmir and elsewhere.[61] According to the Stockholm International Peace

Research Institute (SIPRI) new Yearbook, which was released on 17 Jun 2024, Pakistan has 170 stored nuclear warheads compared to India's 172 warheads. (SIPRI had estimated that India had 164 nuclear warheads against Pakistan's 170 warheads in 2023. India slightly expanded its nuclear arsenal in 2023 and overtook Pakistan in 2024).[62] There is enough evidence to conclude that state-sponsored terrorism is one of the key means adopted by Pakistani leaders to achieve their political ends. Pakistan is expected to follow hybrid strategies against India combining nuclear, conventional, and unconventional means.

China's Evolving Threat in all Domains and Strategic Ties with Pakistan

China is a complex adversary, which has settled boundary dispute with all her neighbours except for India and Bhutan; with the Doklam standoff having lasted for 73 days (16 Jun–28 Aug 2017) and then a massive build-up of Chinese forces on its side of the Line of Actual Control (LAC) from mid-Apr 2020 onwards, leading to Galwan incident of 15 Jun, wherein, the PLA troops unleashed an unprecedented pre-meditated attack on unsuspecting Indian troops with iron rods, nail-studded clubs, spikes, and stones. It resulted in the deaths of Colonel Santosh Babu and 19 other Indian soldiers, who despite being outnumbered inflicted heavy casualties on the Chinese before making the supreme sacrifice.[63] The stalemate on the LAC continues since then.

China has tremendous capabilities in all domains: nuclear, conventional (land, sea and air), space, and cyberspace. China is expanding its nuclear arsenal faster than any other country. SIPRI's estimate of the size of China's nuclear arsenal increased from 410 warheads in Jan 2023 to 500 in Jan 2024, and it is expected to keep growing. For the first time, China may also now be deploying a small number of warheads on missiles during peacetime.[64] Further, PLA is undergoing transformation to become a modernised force, and China is investing heavily for developing niche

technologies like AI, robotics, and autonomous systems, etc. Notwithstanding the Wuhan spirit, China's intentions can change with bewildering speed based on political situation and social stability at home versus international environment. China shares an extensive strategic and economic relationship with Pakistan calling it 'Iron Brother' and 'All Weather Friend'.[65] China has provided Pakistan not only nuclear and missile technology but also a range of conventional arms and munitions. A collusion and collaboration between China and Pakistan will exacerbate India's security dilemma further. Therefore, India must be prepared and formulate her deterrence strategy accordingly.

Strategic Competition and Maritime Challenges in the Indian Ocean

The Indian Ocean is emerging as a pivotal zone of strategic competition. The sea-lanes in the Indian Ocean are considered among the most strategically important in the world—more than 80.0 per cent of the world's maritime oil trade transits through Indian Ocean choke points—with 40.0 per cent passing through the Strait of Hormuz, 35.0 per cent through the Strait of Malacca and 8.0 per cent through Bab el-Mandab Strait.[66] Interestingly, China is dependent upon sea-transportation for 90.0 per cent of its foreign trade and 82.0 per cent of its energy needs in the form of oil and gas, which pass through the sea-lanes of communication of the Indian Ocean but more importantly via the Malacca Straits.[67] Similarly, India's international trade is also mostly sea-based—more than 90.0 per cent by volume and more than 70.0 per cent by value.

In the 'Indo-Pacific' region, in the economic sphere, China has replaced the US and has become the largest trading partner of every Asian country and China's share is continuing to grow. Chinese leadership is fully aware that to become a world power, it is necessary to become a maritime power, which can defend its interests in the far seas. It may be too far-fetched for China to

challenge the American military supremacy on the high seas for a decade or even more.[68] Hence, China has devised a strategy: to expand its strategic space in the South China Sea by creating and militarising the artificial islands to restrict the freedom of manoeuvre of the US Navy; and extend its reach in to the Indian Ocean by getting bases and increasing the presence of its naval vessels. Further, to alter the Asian balance of power, China has developed asymmetric capabilities like anti-access/area-denial capabilities, with the aim of restricting America's ability to dominate its land and maritime boundaries. Thus, there is a common maritime challenge from China faced by India in the Indian Ocean and by the US in the Pacific Ocean, resulting in to convergence of US-India geostrategic interests.[69]

Further, more than half the world's armed conflicts are presently concentrated in the Indian Ocean Region (IOR). As a result, almost all the world's major powers have deployed substantial military forces in the IOR. China is investing hundreds of billions of dollars in infrastructure projects across the region as part of its Belt and Road Initiative. "If an armed conflict emerges from either a 'Misstep' or a more calculated provocation, it is likely to occur in the Indian Ocean where control over shipping lanes is more important than elsewhere, where divergent interests compete and overlap, and where China's ambitions for regional supremacy are the strongest".[70]

India's Need of Comprehensive Strategic Deterrence

With the demographic dividend in her favour for another three decades (the median age of the Indian population is 27.6 years, while it is 37.9 years for China and 48.4 years for Japan, as per the latest estimate)[71], India is emerging as the fastest growing major economic power. Prime Minister Narendra Modi has rightly called the period of 25 years from 2022 to 2047 as *Amrit Kaal* (Golden Age) because during this period, our working age population will expand to the maximum to leverage our economic growth whereas

the western countries and even China will have the burden of an ageing population. Therefore, India would like to ensure peace and tranquillity in her surroundings with a view to prosper and realise her ambition of becoming a great power. This entails formulation of 'Comprehensive Strategic Deterrence' for India, which can address both state and non-state actors in the emerging international multi-domain security environment. However, comprehensive does not mean that there is a single cookie-cutter approach against all types of threats but there are different deterrence measures against different adversaries in different environments.

Against Pakistan

For instance, against Pakistan, which is intended to pose a hybrid conventional-nuclear threat; aim should not be to lower the nuclear threshold, but our deterrence should be made more credible so that its nuclear use should be least likely. This can be achieved with enhanced integration as under:

• Firstly, conventional campaign or the so-called proactive military operations should be designed to shape the adversary's calculus in the direction of nuclear restraint.[72] This may involve negating their nuclear arsenals: by disrupting their C3; decapitate their leadership through rapid (conventional—akin to prompt global strike of the US and/or nuclear) precision strikes; and responsive missile defence intercepts.

• Secondly, conventional operations need to be more resilient to cater for the possibility of limited or negligible nuclear use by the adversary. This will entail launching operations close to adversary's populated areas/infrastructure/assets, whose damage/destruction will be an irreparable loss to the adversary. If the adversary can be convinced that there is no likely operational benefit to be gained from the nuclear strike, it may be possible to deter such attacks.[73]

- Thirdly, if the troops are well-trained and prepared to operate in a nuclear environment, they will manoeuvre with speed and avoid presenting a worthwhile target for adversary's nuclear strike. This will need peacetime training of troops to operate in a nuclear environment.

- Fourthly, it is important to maintain limited, credible integrated options to respond to adversary's nuclear use, and to make these known to the adversary.[74] Whether India will develop and employ tactical nuclear weapons in response to Pakistan's use of the same is a policy decision, which need not be declared. The successful test launch of Prahaar, a 150-km range missile with high manoeuvrability and excellent impact accuracy, gives India an option to engage both counterforce and counter-value targets.[75] It has the flexibility of being fitted with nuclear as well as conventional warheads. The ambiguity about the employment of tactical nuclear weapons will create uncertainty in adversary's mind and, thus, will deter him from using his own in the battlefield.

- The role of tactical nuclear weapons or low-yield nuclear weapons became relevant in Dec 2019 when the USS Tennessee (SSBN-734), with a new W76-2 low-yield (5 KT) warhead on some of its Trident missiles, carried out a deterrent patrol in the Atlantic Ocean. This capability was considered necessary as the US lacked a prompt and usable nuclear capability to deter Russia's use of tactical nuclear weapons.[76]

In the past, earlier during Kargil operations and recently with the surgical strike post-Uri terrorist attack followed by the air strike on Balakot in Pakistan's Khyber Pakhtunwa province, India has called Pakistan's nuclear bluff—raising the nuclear threshold between the two countries.

Against China

China, which is continuously evolving and expanding its deterrence capability through integration in multiple domains, endeavours to achieve her national objectives by remaining below the threshold of armed conflict and preferably operates through her proxies like Pakistan and North Korea. Fighting a war without coming into close contact with the enemy is one of the major aspects of the PLA through the introduction of advanced technologies such as ASAT weapons to target space assets and the institution of Strategic Support Forces to conduct operations in non-traditional domains such as space and cyberspace. Highly flexible, nuanced and innovative, the 'Three Warfares' (psychological, media, and legal) are important components of PLA's non-contact warfare, which are aimed at creating conditions suitable for resolution of conflict on terms favourable to China without resorting to physical war.[77]

Frequent border stand-offs, commencing with the arrival of Xi Jinping in Mar 2013 (Daulat Beg Oldi in Eastern Ladakh in Apr 2013, Chumar in Eastern Ladakh in Sep 2014, Doklam plateau from 16 to 18 Jun 2017, and the latest one in Eastern Ladakh in Apr 2020, resulting into Galwan incident continues with massive deployment on both sides), are part of the typical Chinese strategic game plan. China's threat will be different in different domains, though integrated at the highest level to achieve their designated objectives. Effective deterrence against China requires:

- Integration of diplomatic, informational, military, and economic powers.

- Combining both military and non-military means.

- Building border infrastructure on top priority so that our troops can be mobilised and positioned within 24 to 48 hours. Ability to respond quickly in mountains is a greater and credible deterrent rather than building overwhelming superiority much later.

- Developing capabilities in space and cyberspace domains.

- Credible nuclear triad with a robust and reliable second-strike capability.

In the coming future, China is expected to increase its naval forays and activities in the Indian Ocean. The Indian Navy has formulated 15-year modernisation plan with the goal of increasing its current fleet inventory from 150 warships to 200 by 2027. On the eve of the Navy Day (04 Dec 2022), the then-Chief of Naval Staff Admiral Hari Kumar asserted that the Indian Navy would be fully self-reliant by 2047.[78] The Navy now has 68 warships and vessels on order, collectively worth an estimated INR 2 lakh crore. It has also got the approval to add nine submarines, eight next-generation corvettes, two multi-purpose vessels, as well as five survey vessels. All of these will be manufactured within the country.[79] India on its own cannot deter China in the Indian Ocean, given the latter's expanding naval fleet. India needs to collaborate with the US, Japan, Australia, and Southeast Asian nations to ensure freedom of navigation and rule-based security environment in the Indian Ocean. Annual Malabar exercises allow India to achieve interoperability with navies of the US and Japan. However, scope of 'Quadrilateral' or 'QUAD' needs to be enlarged to achieve economic-cum-security integration among the member countries.

Against Multiple Adversaries in Multiple Domains

Future deterrence scenarios will likely include multiple adversaries operating across multiple domains and using asymmetric warfare and escalate-to-deescalate tactics. To neutralise its multifarious adversaries, India needs 'Comprehensive Strategic Deterrence', which will require whole-of-the government approach to achieve integration between all government and non-government organisations and functions as also in harmony with its strategic security partners. Further in terms of resources, it will need a

credible nuclear triad with robust and reliable second-strike capability, a foolproof C3, and the 'Intelligence, Surveillance and Reconnaissance' apparatus, modernised conventional force, space, cyberspace and missile defence capabilities, and comprehensive plans that coherently link various organisations and their functions.

As regards non-state actors, three kinds of deterrence are proposed by various analysts: First, there is indirect deterrence through third party pressure; Second, deterrence by denial of victory to the terrorists; and third, 'Deterrence by de-legitimation' of the cause that terrorists are fighting for. Each of these types of deterrence has its own constraints if terrorist groups believe in cataclysmic strategies. Deterrence at the individual level will be more effective, which involves deterring individual jihadists from joining the groups or undertaking mindless acts of violence.[80]

Conclusion

Deterrence remains a key to escalation control and war prevention even in the modern era involving all state and non-state actors. It would be a mistake to rely solely on military aspects, in particular nuclear retaliation, given the types of threats, nature of adversaries, multi-domains, and changing public attitudes toward the use of force.

RAND's renowned defence analyst George C Reinhardt wrote in his seminal work 'Deterrence is Not Enough' in Jun 1958 that 'Massive Retaliation' alone cannot combat tactical versatility of the enemy. He stated that "We have created a serious problem by advertising a single-track strategy, while leaving the opponent free to shift at will".[81]

Thus, in case of India too, massive retaliation cannot be considered a panacea against all types of nuclear threats. It is important to widen our deterrence strategy to include dissuasion through other means. Dissuasion through international institutions, treaties, economic sanctions, raising reputation costs, soft balancing, and diplomatic engagement should be part of comprehensive strategic deterrence. Each of these elements has pros and cons and may work under certain conditions.[82]

Finally, for deterrence to function, 'Three Cs' are most important i.e., Capability, Credibility and Communication. Threatening is easy but there should be effective means of communication. In addition to standard miscommunication difficulties, there are perceptual and cultural barriers that should be overcome.

Cyberspace and space have emerged as the new domains, which have made the functioning of deterrence more complex. The US and China have identified the importance of these spheres and have dedicated their energies and resources to master the technologies concerned and evolved and integrated these organisations as part of their whole-of-the-government approach. Rather in case of China, PLA extends its control beyond the military domain into the network warfare capabilities of civilian government agencies. The Indian approach is at best incremental in this regard as it has established cyber, space, and special forces merely as agencies. Though fund constraints can delay the acquisition of requisite weapons or gadgets, but the government must be bold enough in creating appropriate command organisations, which can get into the business of working out policies and procedures for achieving integration and networking between various government and non-government departments. Resources in terms of men and material can be absorbed as and when made available, once the hierarchical structure is ready. After all, deterrence is a mind game in which you influence the mind of your adversaries through your bold and credible decisions.

It is often claimed that NATO's deterrent strategy worked during the Cold War as Warsaw Pact never attacked the NATO area. The difficulty with this claim and with deterrence theory in general is the problem of negative proof. It will always be practically difficult to specify the reasons why aggression or war did not take place and equally difficult, to be sure, that deterrence had succeeded as the cause. Conversely, it might be easier to find evidence from history where deterrence had failed or was not even attempted.[83]

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