Theories of deterrence, which put forward propositions about the nature and mechanisms of deterrence, were mostly developed during the first Cold War era (1945–1963) and dealt with the US–Soviet confrontation. The theory of nuclear deterrence is largely an American product, though there were significant British and French theorists. The troubled relations between India and Pakistan have been a rapidly evolving laboratory for nuclear deterrence theory. A review of the deterrence literature suggests several facets of deterrence theory that are relevant in the India–Pakistan context.

This essay analyzes three instances in the India–Pakistan crises: the 1990 crisis, the Kargil crisis of 1999, and the most recent crisis, that of 2002, in which India mobilized its army on the border for more than ten months after the attack on Indian parliament on 13 December 2001. Did nuclear deterrence work, and are the various theoretical formulations explanatorily useful? We then move on to discuss future scenarios between India and Pakistan and how to make deterrence effective in the subcontinent.

Theories of Deterrence

Deterrence is an old phenomenon which received new significance with the development of the atomic bomb. Discussions of deterrence often start with a Roman proverb, *Si vis pacem, para bellum*: If one wants peace, prepare for war (Luttwak 2001: 1).

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Robert Oppenheimer claimed, immediately after Hiroshima, that because nuclear weapons could cause so much destruction, they would give the advantage to the aggressor and thus encourage surprise attacks. The bomb would make war both more likely and more destructive. The other argument came in response to Oppenheimer’s claim. Jacob Viner and Bernard Brodie (1946) argued that if the aggressor feared retaliation in kind he would not attack. It was generally believed that nuclear weapons, rather than encouraging war, could help to deter it and thus make peace more secure. Kenneth Waltz’s monograph (1981) presented the first detailed and forceful set of arguments of the proliferation optimists. Since that time, however, others have jumped onto the proliferation optimism bandwagon. Conversely, a number of scholars have argued that nuclear deterrence may not be stable in specific regional settings.

Against this backdrop, I outline the current theories of deterrence. These theories are also presented in tabular form in Annexure I.

**Existential Deterrence Theory**

Existential deterrence is a concept invented by McGeorge Bundy. Bundy argued during the Cold War that any nuclear conflict between the superpowers would be fraught with ‘terrible and unavoidable uncertainties’ which have ‘great meaning for the theory of deterrence’. Under conditions of opacity, the role of existential deterrence is dominant. Since each side in an opaque nuclear arms competition has only limited information about the other side’s nuclear forces, any deterrence derived from nuclear capabilities will logically be existential. In other words, mutual deterrence calculations rest not on relative capabilities and strategic doctrines, but on the shared realization that each side is nuclear-capable, and thus any outbreak of conflict might lead to nuclear war. Deterrence of any kind depends on the adversary’s perception of one’s capabilities and one’s resolve to use them. One can make the argument that this kind of deterrence is viable at relatively primitive levels of capability on both sides with neither having disarming first-strike capability. A leading Indian strategist, Jasjit Singh, has coined the term ‘recessed deterrence’ (1998: 318), a concept that basically prohibits the mating of weapons with delivery systems. It is only required to put in place the plans, procedures and organizations that are essential for effective nuclear operations in any eventuality. However, deterrence operates even at low levels of readiness. George Perkovich has called essentially the same concept ‘non-weaponized deterrence’ (2000: 3, 317).

**Classical Deterrence Theory**

Classical or rational deterrence theory evolved in the context of the bipolar international system after World War II, maturing in the 1950s and early 1960s. Classical deterrence theory is confined to relationships between nuclear states and centres on strategic parity and strategic stability. It is generally agreed that the roots of classical deterrence lie in the intellectual tradition that has variously been labelled ‘political realism’, ‘realpolitik’, or ‘power politics’ (Zagare and Kilgour 2000: 4). The state in an anarchic international system is expected to have to rely ultimately on its own strength for its security. Hence, maintaining the balance of power becomes essential for stability. Classical deterrence theory envisages peace when power is equally distributed among actors in the system. This will help not only in maintaining the strategic balance but also the status quo. The status quo will be maintained because there will be neither the capability nor the incentive to change it in a system in which power is distributed equally. The probability of war will be reduced under such conditions. Classical deterrence theory posits a greater probability of war under asymmetry.

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1 See Scott D. Sagan (1994) for details of the arguments of proliferation optimists.
2 These views are echoed in the writings of Lewis A Dunn, (1991); George H. Quester (1983); Zalmay Khalilzad (1983).
3 For various theories in this section, I have drawn heavily on the account of Frank C. Zagare and D. Marc Kilgour (2000).
4 Scholars like Herman Kahn, Thomas Schelling, Albert Wohlstetter, Oskar Morgenstern, William Kaufmann and Glenn Snyder made major contributions to its development and refinement.
As long as a system or a deterrence relationship is stable, the status quo is likely to survive; and when a system or a deterrence relationship is unstable, it implies that either a crisis or war is possible. The proliferation optimists' view that the spread of nuclear weapons will produce stable deterrence is based on a rationalist assumption that the behaviour of new proliferators will reflect their interest in avoiding nuclear war (Waltz 1981: 102). However, the first danger posed by the spread of nuclear weapons would seem to be that each new nuclear state may tempt an older one to strike and destroy an embryonic nuclear capability before it can become militarily effective. The Israeli attack on Iraq's Osirak reactor in 1981 is such a case. Second, while strong nuclear powers can perhaps deter one another, the question arises as to whether weak nuclear powers can deter the strong and whether they can deter one another.

**Structural Deterrence Theory**

Structural deterrence theory is an offshoot of classical deterrence theory, its conceptual framework again rooted in the realist approach to international politics. The proponents of structural deterrence theory emphasize the distribution of power as the guiding principle in bringing about international and strategic stability. The distribution of power in the international system, more specifically among great powers, is the essential basis for international stability or the lack of it. Many structuralists believe that war will be undesirable and unthinkable when a symmetric relationship among the great powers is maintained and the costs of war are very high.

Given that the costs of nuclear war are so high, even a small risk of war can deter under this scenario. A nation will be deterred from attacking even if it believes that there is just a possibility that its adversary will retaliate. The probability of major war among states having nuclear weapons approaches zero (Waltz 1988: 50–51; 1993: 51–55). If one believes this, then the spread and proliferation of nuclear weapons should have positive consequences. This will be analyzed later in the India–Pakistan context. Virtually every structural deterrence theorist believes that the high cost of war in the nuclear era has rendered states more prudent. States are not deterred because they expect to suffer a certain amount of damage, but because they cannot know or are not sure of how much damage they will suffer. It is, therefore, important to point out the importance of the costs of war between two adversaries.

The major tenets of structural deterrence theory are: that the probability of symmetric relationships being peaceful will be greater when the costs of nuclear war are high, that the probability of crises and war among states will be especially high in an asymmetric relationship; and, that the probability of war decreases under conditions in which there is an increase in the absolute costs of war.

**Decision-theoretic Deterrence Theory**

Decision-theoretic deterrence theory also emerges from the basic assumptions and logic of classical deterrence theory. It emphasizes the combinations of preferences, choices and outcomes in determining the course of inter-state conflict behaviour, and hence, the stability of deterrence. The choices made, rational or irrational, at every stage during the unfolding of the process of conflict are of paramount importance in determining outcomes and deterrence stability. The assessment of the costs and benefits in the decision-making process during conflict is the centerpiece of decision-theoretic deterrence theory rather than the structure and distribution of power. The decision-making process becomes crucial and it is generally believed that only an irrational leader would consider a nuclear war as a means of conflict resolution.

The simplest way to illustrate the facets of decision—theoretic deterrence theory is to consider the Chicken game in light of an expected utility model of blackmail developed by Daniel Ellsberg (1975). What is crucial is the calculation of the risks and rewards that affect the adversary's calculations. The Ellsberg model is based on Chicken, where each player's critical risk occurs when the expected utilities of its two strategies are equal. This risk is critical in that it represents the maximum risk of conflict that a defecting player is willing to tolerate. A rational player cooperates at any higher risk level. Hence, the lower a player's critical risk, the more likely it is to cooperate; the higher a player's critical risk, the more likely it is to defect.
Certain assumptions are common to many decision-theoretic deterrence theorists. First, it becomes very difficult for a leader to take any decision particularly during a crisis, because of the uncertainty involved. Decision-makers on both sides experience strategic ambiguity because neither player in the course of an interstate conflict is certain about the other's strategies and cannot read the other's mind except by drawing inferences from the other's statements, postures and behaviour. Second, despite the ambiguity of and uncertainty about the other's behaviour, each state's decision-makers attempt to interpret and estimate the other's likely behaviour on the basis of intelligence reports. In reality, they become subjective in making probabilistic estimates of the opponent's possible actions. Third, the maximin strategy is adopted in decision-making. Each player adopts a play-safe strategy, assuming a maximum of the various estimates of minimum damage to oneself from various possible alternative decisions in a nuclear exchange. The factors influencing rational behaviour and choices become very important. The basic objective of each state in an inter-state conflict will be to maximize survival probability and minimize risks and losses.

In a nutshell, decision-theoretic deterrence theory highlights the need for instituting mechanisms by which rational choices are made during an inter-state crisis. These mechanisms should be devised taking into account the complex problems related to miscalculation, misperception and accident. Bargaining skills become a predominant factor in this process. The assumptions made in decision-theoretic deterrence theory are those regarding uncertainty, subjectivity and rationality. Neither player knows enough about the other's strategy and behaviour. Hence, each gets an opportunity to make a subjective estimate about the other's behaviour. Each player will then choose a play-safe strategy to achieve the highest expected utility. Since both players will be doing this, it will help substantially in stabilizing deterrence.

Organization Theory

An alternative view of the consequences of nuclear proliferation is rooted in organization theory (Sagan 1994). Organization theory leads to a far more pessimistic assessment of the future prospects for peace.

There are two central arguments. First, the premise of organization theory is that the behaviour pattern of professional military organizations is important for stable deterrence. From their typical behaviour pattern, it is highly unlikely that military organizations will fulfill the operational requirements for rational nuclear deterrence. This is because of common biases, inflexible routines and parochial interests on the part of professional military organizations (ibid.: 66–107). Second, it is suggested by the champions of organization theory that only tight and sustained civilian control of the military can help in balancing the logic of the behaviour pattern of professional military organizations. It is also generally believed that future nuclear-armed states will lack mechanisms of civilian control of the military. The current trend suggests that emerging proliferators will either have military-run governments or weak civilian-led governments. This is considered dangerous. There is a high risk of deterrence failure in states where the military is directly running the government. It is not only because the military leadership might elevate the interests of the military over the state. Extensive military involvement in domestic affairs changes the focus of officers' energies and interests, and the military's professional competence as a fighting force suffers. (see Huntington 1957: 71; Perlmutter 1977: 281–88).

Perfect Deterrence Theory

Perfect deterrence theory, developed more recently by Frank C. Zagare and D. Marc Kilgour, uses non-cooperative game theory and offers a new approach to deterrence (2000). It is applicable to both unilateral and mutual direct deterrence relationships and also to extended deterrence relationships where deployment policies are based on the theoretical constructs of massive retaliation and flexible response.

The crux of perfect deterrence theory lies in the working of mutual deterrence, and mutual deterrence works best when both players are capable and pose credible threats. The capability of a player
means an ability to inflict damage and therefore capability becomes a necessary condition for deterrence success. The credibility of a player means that a threat can rationally be believed. Hence, it is understood that only rational threats can be credible. Threat credibility emerges as an important determinant of deterrence success. There is a close link between rationality and credibility. The norm of reciprocity becomes central to the question of credibility in the deterrence equation. Political actors, including states, tend to respond in kind to one another in a tit-for-tat behavior pattern responding with amity for friendship and enmity for hostility. Establishing reciprocity, or tit-for-tat expectations, is tantamount to bolstering credibility, which in turn leads to an increase in the probability of cooperative behavior in others (ibid.: 297). Perfect deterrence theory makes an attempt to analyze and assess the impact of threats. The argument starts with the fact that threats can be both stabilizing and destabilizing. Mathematical modeling based on the theory’s assumptions has shown that sometimes even credible threats can be destabilizing, on the one hand, and incredible threats can be stabilizing, on the other. Such assumptions help in understanding the credibility factor as well as finds consistency in the logic of perfect deterrence theory.

In the perfect deterrence model, deterrence failure is generally associated with an asymmetric distribution of credibility, that is, with an imbalance of resolve. It means that one-sided victory constitutes the modal outcome category when deterrence fails. One player initiates conflict and the other simply concedes defeat. This model helps in understanding a range of real-world outcomes including limited conflicts and escalation spirals. The crux of perfect deterrence theory is based on achieving a minimum necessary capability instead of a dominating capability; this contributes to stability. In this it is similar to decision-theoretic deterrence theory, which too does not demand dominating or overkill capabilities or even parity for deterrence stability.

Three Case Studies

It is essential to discuss a few case studies in the context of India and Pakistan to understand the applicability of theories of nuclear deterrence. Most of these theories were developed in the context of the US–Soviet bipolar Cold War, as also in the context of their much more advanced nuclear explosives and delivery capabilities. Both countries had the advantages of relatively long missile flight times, advanced control and communication systems, hotlines and written treaties, means of verification by satellites, etc. These features are missing in the context of India and Pakistan. The geopolitical environment of the subcontinent has no parallel. The deterrence relationship of the Cold War nuclear rivalry was underpinned by an infrastructure making for a credible second-strike retaliatory capability. The following case studies assess whether or not stable nuclear deterrence in a dynamic context is possible between India and Pakistan.

The 1990 India–Pakistan Crisis

From 1989 Pakistan stepped up its support of insurgency in Kashmir leading to a severe crisis between India and Pakistan. The underlying cause of this crisis was the explosion of separatist feelings in Kashmir. It was intensified and precipitated by the movement of military forces by India and Pakistan prior to May 1990. Whether there was a nuclear component in the crisis and whether nuclear deterrence was central in avoiding a conflict still remains controversial. However, the US played a major role in averting the crisis through the Gates mission, an exercise in preventive diplomacy.

Did India and Pakistan nearly fight a nuclear war in 1990? (Hagerty 1995). In a provocative article published in 1993, Seymour M. Hersh claimed that they almost did (1993). During the crisis with India, according to Hersh, Pakistan had openly deployed its main armoured tank units along the Indian border and, in secret, placed its nuclear weapons arsenal on alert. The United States was then convinced that the world was on the edge of a nuclear exchange between Pakistan and India.

It is clear from many sources that technical evidence from the mid-1980s onward began increasingly to suggest that Pakistan had crossed the stage of production of fissile material and was on to designing the weapons assembly. By 1987, Pakistan had the capability to assemble and deliver a nuclear weapon on India. In fact,
Pakistan had conveyed a message in clear terms that it had the capability to inflict unacceptable damage on India if India took any action that threatened Pakistan's sovereignty and territorial integrity. Pakistan had also conveyed that its action would not be limited to northern India alone but also to facilities outside the north. In March 1987, General Zia made the same observation.

The inference to be drawn is obvious. Pakistan was fully equipped with nuclear weapons by the late 1980s. This was also confirmed by the then Army Chief, General Mirza Aslam Beg, who openly stated that 'both the nuclear option and the missiles act as a deterrent and these in turn contribute to the total fighting ability of the Army, which acts as a deterrent to the enemy'. During the 1990 crisis, Indian intelligence had intercepted some messages which indicated that Pakistan was very close to having a bomb but lacked a sophisticated delivery system.

The Indian nuclear weapons programme was also well underway in 1989. Raja Ramanna, Minister of State for Defence, told the Rajya Sabha in May 1990 that India would never use its nuclear capability against any neighbour, but if any neighbour were to do so, the country would rise to the occasion. Such statements confirm that India was also fully ready with its nuclear weapons capability.

Despite both India and Pakistan being nuclear-capable, both were deterred from war in 1990 by each side's knowledge that the other was nuclear-weapons-capable and that any military hostilities could escalate to the nuclear level. This scenario has been called 'the reciprocal fear of surprise attack' (Schelling 1960). Hence, the logic of nuclear deterrence from a classical deterrence perspective suggests that nuclear weapons deterred war between their possessors. But the political, technical and situational factors in the subcontinent differed sharply from the classical nuclear deterrence framework of the Cold War. The two countries were yet to develop doctrines that would provide the rationale for numbers, types, location, dispersal or use of nuclear weapons. During the 1990 crisis, both India and Pakistan had not overtly declared their weapons programme. This was the consequence of 'opaque' proliferation rather than overt proliferation. Neither India nor Pakistan was making clear its acquisition of nuclear weapons. A high level of secrecy was maintained and both countries knew little about the exact details of each other's capabilities. Hence, there was a lack of information and opacity was maintained.

Many scholars are still grappling with issues related to the 1990 crisis. We still need to know what the origins and true proportions of the 1990 crisis were. Did it possess a nuclear dimension? What brought India and Pakistan to the brink of another conflict? How did Pakistan read Indian intentions? Did Pakistan really assemble one or more nuclear weapons? Did the existence of nuclear capability encourage the de-escalation of tensions?

Which theories best explain the 1990 crisis? It can be argued that the logic of nuclear deterrence was existential deterrence under conditions of opaque proliferation. Existential deterrence can be said to have worked in 1990 because war between India and Pakistan did not break out. The crisis was certainly a severe political conflict between two opaque proliferants. It is generally believed that in an opaque nuclear competition, there is simply no way that Indian or Pakistani planners could have the confidence to launch an entirely successful nuclear first strike.

The theory of existential deterrence explains restraint in the 1990 crisis. But the occurrence of the crisis itself raises the important question: can opaque proliferants deter aggression without overt demonstrations of their nuclear prowess and direct nuclear threats against adversaries? The answer will be in the affirmative because like all nuclear weapons states, opaque proliferants signal resolve to one another through a process of strategic bargaining, which runs along a communication spectrum from formal negotiations to the transmission of intentions via deeds rather than words (Schelling 1960: 53). Opaque proliferants are forced into this mode of discourse by the imperatives of secrecy (Hagerty 1995; Joesk 1990). During the 1990 crisis, there was not an absence of communication between India and Pakistan, but communication of a different type altogether: less formal, less direct. Such communication might

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7 This was stated by Pakistan's Army Chief in October 1989 and was reported in Jane's Defence Weekly, 14 October, 1989.
8 Former Prime Minister of India V.P. Singh observed this during his interaction with the members of the Kargil Review Committee in November 1999.
have established a certain deterrence relationship that obviously may not be as clear as that between the transparent nuclear powers. The signalling of intent seems to have been deliberate during the crisis in both countries. The success of deterrence very much depends on the way each country defines its thresholds and whether these are compatible. The actions of a country during crises are restricted by its notion of threshold. And the bottomline is always to avoid a nuclear escalation.

The Kargil Crisis of May–July 1999

The Kargil crisis of May–July 1999 provides a very good case for studying the various facets of theories of deterrence because both India and Pakistan had by then become transparent nuclear powers. Kargil was a military aggression by Pakistan, with Pakistani army regulars crossing a stretch of the Line of Control (LoC) in four pockets, from the Mushkoh Valley in the west to Turtuk in the Yaldor–Batalik sector in the east. Pakistan had intruded along ridgelines to occupy some key heights and features that dominated a vital road link between Drass and Kargil. The depth of the ridgelines north of the LoC and their gradients, along with nullah approaches, enabled the Pakistan army to provide crucial logistical and administrative support to their forward troops (Singh: 3). The Kargil operation had the support of not just the Pakistani army but the entire state machinery.

What does the Kargil episode imply for theories of how states behave in nuclear crises and how do existing theories help explain it? Kargil was certainly a grave crisis, and the deck seemed stacked against the challenger; Pakistan took the initiative to challenge the status quo. India had conventional as well as nuclear superiority and a strong motivation to prevail. Pakistan’s objectives were clear to an extent — using nuclear capability as a shield to occupy territory in a limited conventional thrust and acquire a bargaining chip in its conflict with India over Kashmir. In Pakistan it is generally believed that Kargil was launched to force India to resume a substantive dialogue on Kashmir. It is probably true that Kargil had other motives and objectives as well, being at least in part a response to what Pakistan believed were Indian incursions over the LoC at the Siachen glacier. Had Pakistan been able to consolidate its position in Kargil, it could have shelled the road leading to the Indian positions in Siachen and perhaps compelled a withdrawal. Hence, one can argue that Pakistan wanted to create a tit-for-tat situation. Although this would not have fundamentally changed the situation in Kashmir, it would certainly have been an important symbolic victory that could have shaken Indian confidence and led India to at least contemplate political concessions. Pakistan’s strategic situation, however, was weak because of its limited resources, and many in Pakistan think it was a misadventure.10

India seems to be content with the status quo in Kashmir and hence wants to preserve rather than change it. Pakistan does not want to adjust to the status quo though this might be a response consistent with realpolitik. In fact, analysts belonging to the realist school of thought have argued that states not only acquire the resources for protecting their interests, but also need to develop the art of adjusting their interests to fit their resources. The art of adjusting one’s interests has been broadly discussed in the context of national power, which includes three interlinked elements—military strength, economic development and internal order. The conceptual underpinning of India’s security management is very close to what Stephen Krasner (1983) calls ‘modified structuralism’. In the modified structuralist view, decision-makers operate in ‘a world of sovereign states seeking to maximize their interest and power’. India has been seeking to maximize its power but has also realistically adjusted its interests to match its actual power and resources. Pakistan has been unwilling to so adjust its interests and rejects what John Kenneth Galbraith called the ‘North American solution’ — the sacrifice of Kashmir and acceptance of a subsidiary if not subordinate role in South Asia.

Hence, the crux of Pakistani strategy has been to increase the costs and risks to India of maintaining the status quo in Kashmir.

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9 Interactions with academics in Islamabad on this issue in December 2003, more particularly on Pakistan’s political objectives with regard to India.

10 There was a general consensus on this point among academics and members of the strategic community in Pakistan during my interaction in Islamabad and Lahore in December 2003.
Therefore, the ability and willingness to create a crisis becomes an important component of Pakistan's strategy. Nuclear weapons capability played a key role in crisis initiation by Pakistan. The existence of nuclear weapons allows a state to put pressure on its adversary because no one can guarantee that a crisis will remain under control, and this danger also inhibits the challenged state from escalating the crisis.

India's surprise in Kargil has been comprehensively discussed by the Kargil Review Committee (2000). Pakistan knew that its only chance of success lay in taking India unawares. By definition, this meant doing something that India never expected. India had taken the diplomatic initiative in February 1999 and adopted a series of confidence-building measures as outlined in the Lahore Declaration and Memorandum of Understanding. Pakistan succeeded in surprising India despite the fact that 'assessments made by the Joint Intelligence Committee since 1991 have emphasized how Pakistan might use its nuclear capability to advance its objectives in Kashmir' (ibid.: 197).

Despite the fact that Kargil did not involve deployed nuclear weapons, it was centred on nuclear weapons: the threat to use them, the threat to prevent their construction, and the threat of future use (Sidhu 2000: 132). There is no doubt that nuclear weapons did figure in Pakistan's security calculus. This is confirmed by statements made during the crisis by top leaders regarding the possible use of nuclear weapons if the situation went out of control. The nuclear dimension of the Kargil conflict became apparent when Pakistan's then Foreign Secretary Shamshad Ahmed complicated the sensitive situation by saying that 'Pakistan will not hesitate to use any weapons in its arsenal if the Indian forces were found to be operating on Pakistan's side of the border.' This was an implied threat of nuclear retaliation if India crossed the LoC during its military campaign against the infiltrators in Kargil. Pakistan had also announced that it would equip its warships with nuclear weapons in order to be able to respond to any threat that the Indian forces might pose to the territorial integrity of Pakistan.

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11 Prime Minister of India Atal Behari Vajpayee took a bus to Lahore on 20 February 1999 and signed the Lahore Declaration.
12 Shamshad Ahmed made this statement at the peak of the crisis on 31 May 1999 and was reported widely in both Pakistani and international media.

However, India showed utmost restraint and the escalation spiral was contained. The role of the US in averting the crisis is well known (Talbott 2004: 154–69). The role of external actors, more specifically the United States, can be expected to increase in the future in moderating India–Pakistan crises. Pakistani analysts also see the role of external actors as central to India–Pakistan deterrence.

Decision-theoretic deterrence theory and structural deterrence theory both yield partial insights into state behaviour in Kargil. The relevance and importance of decision-theoretic deterrence theory can be seen in view of the fact that the Kargil crisis did not escalate beyond a point because India did not horizontally expand the scope of the conflict. Nor did it attempt a conventional thrust across the LoC, limiting itself to ejecting the intruders. India's decision was a risk-averse rational choice and averted the crisis. India's assurance that it would not be the first to use nuclear weapons during the Kargil conflict was also a stabilizing factor. It had certainly calculated the costs of war as the crisis played itself out and hence exercised maximum restraint (although it is debatable how restrained India would have continued to be if it was unsuccessful in ejecting the intruders). Structural deterrence theory can also be said to be relevant since there was an asymmetry between India and Pakistan at both the conventional and nuclear levels and the absolute costs of nuclear use would be very high. According to the theory, such asymmetrical relationships have always been identified with crises and war and Kargil can be said to be a case. However, mutual nuclear restraint can be said to have prevailed despite asymmetries due to high absolute costs of nuclear war even with very limited capabilities. But the theory would appear to indicate that the asymmetries between India and Pakistan, particularly if they grow, and if one or both is a revisionist power in its political and territorial objectives, will lead to the recurrence of crises in the future though they may not lead to nuclear use.

A final and important point is that Kargil required US intervention at the presidential level, and in fact its influence was critical

13 This view was expressed during interactions with Pakistani analysts in Islamabad in December 2003.
14 This perspective on deterrence in the subcontinent is held by most Pakistani analysts.
in averting the crisis. This is troubling, because third-party mediation is not taken into account in any of the theories of deterrence (Ganguly and Hagerty 2005.)

The India–Pakistan Crisis of 2002

This crisis in South Asia began with the attack on the India’s parliament building by terrorists on 13 December 2001, and was severely aggravated after the Kaluchak massacre (of families of army personnel by infiltrators) in May 2002. India blamed Pakistan for the terrorist attack on its parliament and responded with full mobilization on the border for over ten months until October 2002. This crisis renewed the debate on the stability of nuclear deterrence between India and Pakistan. There are conflicting perspectives on the debate. According to one, nuclear deterrence worked during the crisis because neither country launched war. From another standpoint, nuclear deterrence did not work and war between India and Pakistan was imminent. From this perspective, if nuclear deterrence was really effective, instability on the Indo-Pakistan border would not have persisted or intermittently escalated to dangerous levels to give the world the impression that a nuclear war was about to occur (Kumar 2002a). A near-war situation did occur in May 2002. There was alarm in the US during the May 2002 Kaluchak incident. Stringent strictures regarding travel to both India and Pakistan were issued by a number of countries. These countries began evacuating their staff from their embassies in Islamabad and New Delhi in anticipation of a full-fledged war followed by a nuclear exchange.

It can be argued that the logic of rational nuclear deterrence worked during the crisis in 2002 because war was averted, that is, India was deterred from launching even a limited conventional attack on Pakistan despite issuing threats to do so because of the fear of nuclear retaliation. It is generally believed among the strategic community in India and Pakistan that if India had followed a trans-LoC ‘hot pursuit’ policy, conventional war would have broken out and Pakistan might have resorted to the use of nuclear weapons if it lost too much ground. Pakistan had made statements signalling use of nuclear capability to deter India from using conventional force. The rationale of Pakistan having nuclear weapons has been the avoidance of a conventional war with India. Pakistan treats nuclear weapons as weapons of war and not deterrence. However, it took high-level US intervention to avert the slide towards war in May–June 2002. As in Kargil, this is theoretically troubling as third-party _de facto _mediation is absent from all theories. And there is little doubt that Pakistan’s direct and indirect (insurgency and terrorism-supporting) actions have undermined the stability of nuclear deterrence since 1998.

Deterrence theorists have focused on two central problems confronting India. The first is how to deter a nuclear attack on India by Pakistan. The obvious answer would be to maintain the nuclear capability to retaliate in kind in the event of a nuclear attack by Pakistan. The second problem for India is much more difficult and complex: how to make its nuclear deterrence effective in the context of a possible conventional war? The question can also be put this way: why would Pakistan believe India’s threat to strike it with nuclear weapons if Pakistan strikes India’s forces or some homeland targets in a limited or ‘warning’ nuclear strike intended to terminate a conventional war going badly for it) when Pakistan could in turn retaliate by launching a nuclear strike against it with its surviving weapons?

This credibility problem is what has motivated the conceptual development of deterrence theory. If, as deterrence theorists assumed, all-out war was unthinkable, how could one deter aggression of a more limited kind? One plausible response to successful conventional aggression in the subcontinental context is to retaliate with nuclear weapons in a limited way so that the enemy still had major value targets to lose if it persisted with its aggression on the ground or used nuclear weapons. The crisis of 2002 left India with the choice of either doing nothing to counter Pakistan’s low-intensity warfare, including terrorist strikes, or starting a general war.

A solution to the problem of credibility is what Thomas Schelling calls ‘threats that leave something to chance’ (1960: 40–41), i.e., situations under which events might spin out of control. This argument is highly relevant in the context of 2002. The argument

15 Another point that came out during discussions with academics and members of the strategic community in Islamabad and Lahore during 11–22 December 2003.
is not that deterrence comes from the danger that India will decide on an all-out war in response to an aggressive action by Pakistan. Rather, that if Pakistan (or India) initiates a crisis, the risk of general war will rise because 'impetuous decision, errors of judgment, and suspicious or ambiguous modes of behavior' will become more likely (Kumar 2002b). 'Each player's best choice of action depends on the action he expects the other to take, which he knows depends in turn on the other's expectations of his own', says Schelling (ibid.: 15, n. 43). Both India and Pakistan understand that nuclear weapons are likely to be so catastrophically destructive that their use cannot be a rational policy.

The crisis in 2002 confirmed that the possibility of total war between India and Pakistan is low or nil. And India has since induced Pakistan to revise its policy on insurgency in Kashmir. To an extent the crisis has opened up new questions on whether Pakistan will abandon Kashmir. However, misperceptions and miscommunication between India and Pakistan have challenged deterrence stability. There is an urgent need for a sustained dialogue at the political, strategic and military level. It is necessary to understand each other's capabilities and perceptions in order to bring about effective deterrence. Despite the fact that nuclear weapons are a reality in the subcontinent, strategic thinking seems to be traditional in its openness to the possibility of limited conventional war. It is clear from the two earlier case studies that nuclear weapons will only deter nuclear war but will not deter limited conventional or sub-conventional war. However, such a corollary is debatable after the 2002 crisis as regards limited conventional war.

Deterrence for the Subcontinent

The geostrategic environment of the subcontinent has no parallel in the Cold War. India and Pakistan share a long border; the US and USSR did not. This dramatically shortens the timeframe within which either country would have to decide, in the midst of a crisis or war, whether or not to use nuclear weapons (Thakur 2000: 113). Hence, it is a challenging and complex task to create a deterrence model for the subcontinent.

Within the rational deterrence framework, three major requirements for stable nuclear deterrence must exist or be created in the India—Pakistan context. First, both countries must develop not just the ability to inflict unacceptable damage to the other side, but also a sufficient degree of 'second-strike' invulnerability so that their forces could retaliate if attacked first. Second, the threat to retaliate with nuclear weapons for a nuclear attack must be credible. Third, the nuclear arsenals must not be prone to accidental or unauthorized use.

For the first, it appears that both India and Pakistan might have a kind of crude second-strike capability due to ignorance on both sides about the location and numbers of their nuclear devices and delivery systems. Additionally, a second-strike capability requires that nuclear arsenals in both India and Pakistan be technologically reliable. Effective command, control and communication systems should be in place in both countries.

The ideal deterrence model for the subcontinent would be based on opacity on the grounds that declared thresholds and redlines undermine operational flexibility and increase nuclear risks during crises, i.e., deter by creating uncertainty about the kind of response that can be expected to any particular action rather than declaring responses or redlines for specific actions. Transparency can only work when there is an absence of continuous conflict and periodic crises. Restraint in nuclear deployment as a part of both India's and Pakistan's policy of minimum nuclear deterrence might help in crisis stability in South Asia.

For credibility, perceptions of intentions and political will are crucial. As deterrence theory suggests, since both intentions and capability are important factors in stabilizing deterrence, it would be worthwhile for both India and Pakistan to moderate their rhetoric. Since deterrence primarily relies on the threat of future harm,
the deterrent's credibility is obviously a key factor in making deterrence work. Credibility may be determined by many factors; one of the most significant is the importance to the deterrent of the stakes involved. In the India–Pakistan context, the importance of the stakes involved in many of the potential deterrence situations may not be clear. In any case, deterrence rests not so much on the deterrent's will and ability to use military force as on its adversary's perceptions of them. These perceptions are determined not only by the objective realities but also by subjective interpretations of observed actions.

Deterrence theory also assumes a certain transparency of intentions and capability. In principle, the party to be deterred should be able to calculate the deterrent's willingness to use force and capability to do so with some degree of accuracy, to determine whether or not to proceed with its course of action. In the context of the subcontinent, the intentions of parties have always been opaque, particularly in crises. Dialogue and established channels of communication between India and Pakistan are, therefore, essential factors in the maintenance of deterrence stability. The diplomatic, political, and technological framework of confidence-building and crisis management for stable deterrence is missing. Both countries need to put this in place as it will also address the problem of accidental or unauthorized use that may come from dispersion and/or delegation of the authority to use nuclear weapons. Both countries need to understand how each understands the other.

### Annexure I

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<th>Theories of Deterrence</th>
<th>Main Tenets</th>
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| 1. Existential Deterrence Theory | • Conditions of opacity paramount.  
• since each side in an opaque nuclear arms competition, has only limited information about the other side's nuclear forces deterrence derived from nuclear capabilities will logically be existential.  
• Mutual deterrence calculations rest not on relative capabilities and strategic doctrines, but on the shared realization that each side is nuclear-capable, and thus any outbreak of conflict might lead to a nuclear war. | Concept coined by McGeorge Bundy.  
This kind of deterrence is viable at relatively primitive levels of capability on both sides with neither having disarming first-strike capability. |
| 2. Receded Deterrence | • Deterrence of this type means only to put in place the plans, procedures, and organization that are essential for effective nuclear operations in any eventuality. | Concept coined by Jasjit Singh.  
George Perkovich's notion of 'non-weaponized deterrence' to an extent conveys the same meaning. |

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| 3. Classical Deterrence Theory or Rational Deterrence Theory | - The theory is confined to relationships between nuclear states and centres on strategic parity and strategic stability.  
- The roots and origins of this theory lie in the concept of 'political realism', 'realpolitik', or 'power politics'.  
- Maintaining the balance of power system becomes essential and crucial for stability.  
- Peace is possible only when power is equally distributed among actors in the system.  
- Status quo among actors in the international system could be maintained only through equal distribution of power. | - Evolved in the context of bipolar international system.  
- Matured in the 1950s and early 1960s.  
- Scholars like Herman Kahn, Thomas Schelling, Albert Wohlstetter, Oskar Morgenstern, William Kaufmann and Glenn Snyder made major contributions to the development and refinement of theory. |}

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| 3a. Structural Deterrence Theory | - Probability of war will be reduced under such conditions. | - The conceptual orientation of this theory is again linked with the realist approach to international politics.  
- Distribution of power is the guiding principle.  
- The probability of symmetric relationships being peaceful will be high when the costs of nuclear war are high.  
- The probability of crises and war among states will be especially high in an asymmetric relationship.  
- The probability of war decreases under conditions in which there is an increase in the absolute costs of war. | - An offshoot of classical deterrence theory.  
- Most structuralists believe that war will be undesirable and unthinkable when a symmetric relationship among great powers is maintained and the costs of war are very high.  
- John Lewis Gaddis, Kenneth Waltz, John J. Mearsheimer, Glenn H. Snyder main proponents of this theory. |}

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<td>3b. Decision-theoretic Deterrence Theory</td>
<td>• It emphasizes the combinations of preferences, choices and</td>
<td>- It also emerged from the basic assumptions and</td>
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<td>outcomes in determining the course of inter-state conflict behaviour, and hence the stability of deterrence.</td>
<td>logic of classical deterrence theory.</td>
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<td>The choices made at every stage during the unfolding of the process of conflict are of paramount importance in determining outcomes and deterrence stability.</td>
<td>To illustrate the facets of decision-theoretic deterrence theory, Daniel Ellsberg developed a model considering Chicken in light of an expected utility model of blackmail.</td>
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<td>Assessment of the costs and benefits during the conflict paramount.</td>
<td>Highlights the need for instituting mechanisms by which rational choices are made during an inter-state crisis.</td>
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<td>The Ellsberg model is based on Chicken, where each player's critical risk occurs when the expected utilities of its two strategies are equal.</td>
<td>These mechanisms should be devised taking into account the complex problems related to miscalculation, misperception and accident.</td>
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<td>Bargaining skills become a predominant factor in the process.</td>
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4. **Organization Theory**

- The premise of organization theory is that the behaviour pattern
- The current trend suggests that the emerging proliferators either

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<td>of professional military organizations is important for stable deterrence.</td>
<td>have military-run governments or have weak civilian-led governments.</td>
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<td>Only tight and sustained civilian control of the military can help in balancing the logic of the behaviour pattern of professional military organisations.</td>
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5. **Perfect Deterrence Theory**

- This theory uses non-cooperative game theory and offers a new approach to deterrence. | Developed by Frank C. Zagare and D. Marc Kilgour. | 
- It is applicable to both unilateral and mutual direct deterrence relationships and also to extended deterrence relationships where deployment policies are based on the theoretical constructs of massive retaliation and flexible response. | • Crux lies in the working of mutual deterrence. | 
- Parity for deterrence stability not required. | • Capability and credibility of threats paramount. | 
- Requires the achievement of a minimum necessary capability. |
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